ADITYA BIRLA
HINDALCO

Letter No: AAP/E&S/EC/2023/ 1009 Date: 22/11/2023

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

Sub: Submission of Six Monthly Compliance from April'23 to September'23.

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 & J-11011/136/2009-IA. II (1) dated 12/08/2022.

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'23 to September'23.

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 2023– September 2023

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(I), dated 29th November 2012, letter no. J-11011/136/2009-IA II (I), dated 14th June 2013 and EC amendment letter no. J-11011/136/2009-IA.II (I), 14th August 2018, 20th July 2020 & 12th August 2022. For 7,20,000 TPA Aluminium Smelter & 1650 MW Captive Power Plant
Period of Compliance Report	:	April 2023 to September 2023

Sr. No.	Specific Conditions	Compliance Status
i)	The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow.	The streams passing through the project site is not being disturbed.
ii)	Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.	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.
iii)	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.	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 2023 to September 2023 in Anode baking Furnace stacks is stated below: Stack attached to / PM Emission (mg/Nm3): (Min) / (Max) / (Avg) FTC # 1: 3.4 / 5.1 / 4.2 FTC # 2: 3.6 / 4.2 / 3.8 The monitoring report of Fume treatment Plant

<table>
<tr><td></td><td></td><td>stacks is attached as Annexure-1.</td></tr>
<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 2023 to September 2023 is stated below:
<table>
<tr><td rowspan="2">Stack attached to</td><td colspan="3">Particulate Fluoride Emission (mg/Nm3)</td></tr>
<tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr>
<tr><td>GTC # 1</td><td>0.10</td><td>0.12</td><td>0.11</td></tr>
<tr><td>GTC # 2</td><td>0.10</td><td>0.11</td><td>0.11</td></tr>
</table>
The average fugitive particulate fluoride emission from pot rooms during April 2023 to September 2023 is 0.035 kg/ton of metal produced.

The monitoring reports of Gas Treatment Centre stacks is attached as Annexure-2.</td></tr>
<tr><td>v)</td><td>The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) should not exceed 2 mg/Nm^3. The data on PAH should be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhubaneswar and SPCB.</td><td>The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) are being monitored on monthly basis and found within the standard. (Ref: Annexure 1).</td></tr>
<tr><td>vi)</td><td>In plant, control measures like fume extraction and dust extraction system for controlling fugitive emissions from all the materials handling/transfer points shall be provided to control dust emissions.

Fugitive Fluoride emissions from the pot room and in the forage around the smelter complex and the data submitted regularly to the Ministry Regional Office at Bhubaneswar and SPCB.

Further dry scrubbing system to control the emissions from the pot lines should be provided.</td><td>Fume Extraction Centre (FTC) in Anode Baking furnace, Gas Treatment Plant (GTC) in potlines and bag filters in raw material handling, GAP, Anode Baking, Roding areas, bath recycling, carbon recycling area, butts recycling area, cathode sealing shop etc in smelter area and coal handing, ash handling plant in captive power plant is installed to control fugitive dust emissions.

Online Roof Top Monitoring analyzer installed for Fugitive fluoride (HF) monitoring in potrooms, the concentration of hydrogen fluoride (HF) varies between 0.100 mg/m3 to 0.243 mg/m3 and average is 0.161 mg/m3 during April 2023 to September 2023. The daily average emission report during these period is attached as Annexure-3.
Forage fluoride analysis around the smelter is</td></tr>
</table>

<table>
<tr><td></td><td></td><td>being carried out on quarterly basis and the concentration of the forage fluoride (analysed in August 2023) are listed below:

<table>
<tr><th>Location</th><th>Species</th><th>Fluoride (in ppm)</th></tr>
<tr><td>Bomaloi</td><td>Aegle marmelos, Oryza Sativa,</td><td>1.7</td></tr>
<tr><td>Gurupali</td><td>Cynodon dactylon, Azadirachta Indica</td><td>1.4</td></tr>
<tr><td>Plant Site</td><td>Dalbergia Sissoo, Cynodon dactylon</td><td>2.1</td></tr>
<tr><td>Thelkolai</td><td>Pongame oil tree, Cynodon dactylon</td><td>1.5</td></tr>
<tr><td>Gumukarma</td><td>Bambuso ideade, Oryza Sativa</td><td>2.9</td></tr>
<tr><td>Ghichamura</td><td>Mimusops elengi, Oryza Sativa</td><td>1.4</td></tr>
<tr><td>Tileimal</td><td>Oryza Sativa, Cynodon dactylon</td><td>1.2</td></tr>
<tr><td>Lapanga</td><td>Azadirachta Indica Oryza Sativa</td><td>1.8</td></tr>
<tr><td>Jangala</td><td>Cynodon dactylon, Oryza Sativa,</td><td>1.2</td></tr>
<tr><td>Bhadrapali</td><td>Pongame oil tree , Oryza Sativa,</td><td>1.4</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></tr>
<tr><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-2023 to September-2023 is stated below:</td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<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>40.4</td><td>43.4</td><td>42.0</td></tr>
<tr><td>CPP 2</td><td>43.6</td><td>46.2</td><td>44.6</td></tr>
<tr><td>CPP 3</td><td>39.2</td><td>44.2</td><td>41.6</td></tr>
<tr><td>CPP 4</td><td>42.1</td><td>45.2</td><td>43.2</td></tr>
<tr><td>CPP 5</td><td>40.6</td><td>44.2</td><td>42.3</td></tr>
<tr><td>CPP 6</td><td>40.2</td><td>43.6</td><td>42.2</td></tr>
</table>
</td></tr>
<tr><td>viii)</td><td>Provision for installation of FGD shall be provided for future use.</td><td>Provision has been kept for Installation of FGD and will be utilize for the proposed FGDs near to the CPP. Installation & commissioning of Semi-dry FGD system has been completed in CPP Unit-6.</td></tr>
<tr><td>ix)</td><td>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}.</td><td>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.</td></tr>
<tr><td>x)</td><td>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.</td><td>Dust extraction systems (DE), Dry fog dust suppression (DFDS) & Rain gun water sprinkling systems are installed in coal handling plant and ash handling system of Captive Power Plant.</td></tr>
<tr><td>xi)</td><td>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.</td><td>Ash generated from CPP 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 unit 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 are being filled-up with Ash as per the Guideline for Reclamation Low Lying Areas and Abandoned Quarries with Ash of SPCB, Odisha.

The status of ash utilization for the period from April 2023 to September 2023 is stated below:
<table>
<tr><th>Particulars</th><th>Quantity in MT</th></tr>
<tr><td>Total ash generated</td><td>869144.7</td></tr>
<tr><td>Total Ash Utilised</td><td>769059.4</td></tr>
<tr><td>Ash Utilization (%)</td><td>88.48 %</td></tr>
</table>
Details of the ash utilization from April-2023 to September-2023 is attached as Annexure- 4.</td></tr>
<tr><td>xii)</td><td>Fly ash shall be collected in dry form and storage</td><td>Fly ash & bottom ash are collected in dry from</td></tr>
</table>

	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 lying area.	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 discharged to the Ash pond through High Concentration Slurry Disposal (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 carried out 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).
xiii)	Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.	The specific fluoride (as F) consumption for the period April-2023 to September-2023 is 7.95 kg/ton of Aluminium produced.
xiv)	Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant. The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed-off in secured landfill. The location and design of the land fill site shall be approved by the SPCB as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. Leachate collection facilities shall be provided to the secured land fill facilities (SLF). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for greenbelt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.	Anode butts generated from the pots is being cleaned and recycled completely for making green anode in green anode plant. The Carbon part of SPL is being supplied to M/s Green Energy Resources, Sambalpur & M/s Regrow Transo Pvt. Ltd. Jharsuguda for reprocessing/detoxification and in this way the carbon part is completely recycled. M/s ReSustainability Ltd has established the facility for detoxification and disposal of SPL refractory as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. SPL refractory part is being disposed in CHWTSDF. Around 12607.75 MT SPL Refractory part and 1717.9 MT Carbon part is in stock till end of September- 2023 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. Permission has been received from SPCB for SPL refractory/fine mix dust supplied to authorized cement plants for co-processing in cement kiln. We are exploring for disposal of SPL fine mix dust/refractory to cement plants for coprocessing 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 /partly selling to authorized recyclers and the residue generated from dross processing unit is being sent to OSPCB authorized recyclers for Alum/synthetic slag making. 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 M/s Green Energy Resources , Sambalpur & M/s Regrow Transo Pvt. Ltd. Jharsuguda. Permission has been received from SPCB for SPL refractory/fine mix dust supplied to authorized cement plants for co-processing in cement kiln. We are exploring for disposal of SPL fine mix dust/refractory to cement plants for coprocessing in cement kiln. SPL refractory/fine mix dust disposal to cement plants will be started soon.
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 has been lined with HDPE liner and adequate safety measures have been taken to minimize the risk to the ash dyke. The ash be disposal through HCSD system has been implemented. The decanted water from the ash pond is being completely recycled and reused for ash disposal. The existing ash pond over an area of 37 acres having fly ash quantity 9.44 lakh MT has been reclaimed. Certificate of closure and reclaimation has been received from SPCB vide letter no. 14036/IND-I-CON-6120 dated 04-09-2023. An emergency ash pond has been developed over an area of 30 acres adjacent to existing

		pond as per the design & drawings provided by NIT-Rourkela and is in operation.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	We are maintaining 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 carried out 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 the effluent treatment plant and treated effluent shall be recycled/reutilized in the process in smelter and CPP and also for fire protection, dust suppression, greenbelt development etc. Domestic effluent shall be treated in sewage treatment plant (STP) and treated domestic waste water will be used for greenbelt development.	No additional fresh water will be sourced from Hirakud Reservoir for the proposed expansion. The water requirement estimated for the expansion is within 52.73 cusec, as approved. The Effluent from the cooling towers and de-mineralization plant is being treated in Double Stage RO based effluent treatment plant and is being reused/reutilized in the process of CPP. Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.
xxi)	No effluent shall be discharged outside the premises of smelter during non-monsoon period and shall be discharged during the monsoon period only after treatment and meeting the norms of the OSPCB/CPCB.	We are operating a Double Stage 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	Aditya Aluminium has developed 33% Greenbelt over an area of 1098 acres inside the plant, ash

	consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/Ha.	pond area and township areas. Around 7,38,030 saplings planted till September 2023.
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 (60,000 cum capacity)has been developed inside the township area. 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 Environment policy has been revised and approved by the Board on 9th August 2022. 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 Enterprise Social Commitment (ESC) till September-2023 is Rs 68.17 Crores. The details of the expenditure made under Enterprise Social Commitment (ESC) till September-2023 is attached as **Annexure-10**.
xxx)	The company shall provide housing for construction labour within the site with all	The construction activities are completed after the plant is installed & commissioned. However,

	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.	in case of any construction & maintenance 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&CC.
	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 time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	We have noted and accepted the stipulated condition.
iv)	At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO_2 and NO_x are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and Orissa State Pollution Control Board once in Six months.	Installation of four (04) CAAQM Stations completed and commissioned. Data connectivity established with the servers of OSPCB and CPCB. Installation of the continuous stack emission monitoring 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	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

	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).	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 programmes, 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 implement the conditions stipulated by the Ministry of Environment & Forests as well the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.	Requisite fund was allocated and has been spent towards capital cost and recurring cost/annum is also allotted & spent for 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 body 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	The status of compliance to the EC conditions is being submitted to the Regional office of the

	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.	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 digitally 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. Further, we are also submitting the EC compliance reports through Parivesh Portal accordance to MoEFCC office memorandum dated-14th June 2022. 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 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 by e-mail.	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 has been submitted vide our letter no. AA/E&S/EC/2023/979, dated 12.09.2023.
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	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

	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.	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 operating 360 pots out of 360 pots in Smelter and 6 units (6x150 MW) in CPP.
Sr.N	**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. However, at present the Carbon part is being supplied to M/s Green Energy Resources, Sambalpur & M/s Regrow Transo Pvt. Ltd. Jharsuguda. for reprocessing and utilization, in this way the carbon part is completely recycled. The SPL refractory part is being sent to CHWTSDF site of M/s Resustainability Ltd at kanchichuhan, Dist- Jajpur for detoxification and disposal, as per the protocol given by CPCB.
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 detail ash utilization from April 2023 to September 2023. The status of ash utilization for the period from April 2023 to September 2023 is stated below:

Particulars	**Quantity in MT**
Total ash generated	869144.7
Total Ash Utilised	769059.4
Utilization (%)	88.48 %

		Utilization (%)	88.48 %
iii)	All the measures proposed during the presentation and application shall be implemented.	We have noted and will be implemented.	
iv)	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.	We have noted and accepted.	
v)	The project proponent shall develop in-house facilities for treatment of SPL in 2 to 3 years.	The Carbon part of SPL is being supplied to M/s Green Energy Resources , Sambalpur & M/s Regrow Transo Pvt. Ltd. Jharsuguda for detoxification and reuse as carbon fuel. We are in process to exploring suitable technologies for treatment and area of utilization (co-processing in cement plants). M/s Re Sustainability Ltd has established the facility for detoxification and disposal of SPL refractory as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. SPL refractory part is being disposed in CHWTSDF. Around 12607.75 MT SPL Refractory part and 1717.9 MT Carbon part is in stock till end of September- 2023 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. Permission has been received from SPCB for SPL refractory/fine mix dust supplied to authorized Cement Plants for co-processing in cement kiln. SPL refractory/fine mix dust disposal to cement plants will be started soon.	
vi)	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.	It is being Complied.	
vii)	The Project Proponent shall take fresh environment clearance in case of any change in the scope of the project.	There is no change in the scope of the project.	

Encl: As above

Sameer Nayak

(Authorised Signatory)

Point wise compliance of the conditions stipulated in letter no.20489/IND-II-NOC-NIPL/20 dated 20th Dec-2021 regarding Verification on "No Increase in Pollution Load Certificate" by OSPCB.

Project Name: - Proposed Change in Product Mix by installation of FRP capacity of 340 KTPA within existing plant premises of Aditya Aluminium (Project under Implementation)

S.No.	Conditions	Compliance status
i.	The proponent shall inform to the MoEF&CC, Govt. of India about verification of "No Increase in Pollution Load Certificate" for installation of Manufacturing Facility of FRP of capacity 340 KTPA (Phase 1: 170 KTPA & Phase 2: 170 KTPA) involving changes in product mix (i.e. addition of sheets and Coils) inside the plant premises of Aditya Aluminium and take additional pollution control measures, if any as advised by the MoEF&CC, Govt. of India.	Complied. Information regarding the NIPL Certificate has been submitted to MoEF&CC, New Delhi vide letter no. AA/E&S/22/761 dated 07.01.2022 submitted on 10.01.2022.
ii.	The proponent shall upload the "No Increase in Pollution Load Certificate" for the proposal on the online portal developed by the MoEF&CC, Govt. of India for No Increase in Pollution Load Certificate and submit the screenshot of the same along with application for Consent to Establish for the proposal	NIPL certificate obtained from NIT, Rourkela has been uploaded on Parivesh portal (Proposal number IA/UP/IND/223122/2021 dated 09.08.2021). Copy of the screenshot submitted along with the NIPL application to OSPCB through online portal on 04.09.2021 and offline on 27.11.2021.
iii.	The proponent shall obtain Consent to Establish from the Board for the installation of Manufacturing Facility of FRP of capacity 340 KTPA (Phase 1: 170 KTPA & Phase 2: 170 KTPA) involving changes in product mix (i.e. addition of sheets and Coils) inside the plant premises of Aditya Aluminium before going for construction activity.	CTE has been obtained from OSPCB for the FRP project vide letter no.455/IND-II-CTE-6594 dated 06.01.22.
iv.	The project proponent shall take responsibility to satisfy itself about 'no increase in pollution load' as a result of changes, expansion or modernization, as the case may be, before under taking such changes or increase, and the project proponent shall be liable for action under the provisions of the Environment (Protection) Act, 1986 if on verification of facts or claim it is found that such change or expansion or modernization involves increase in pollution load.	We have noted and accepted it.

S.No.	Conditions	Compliance status
v.	The proponent shall abide by the guidelines / SOPs if issued by the MoEF&CC, Govt. of India in future as per order passed by the Hon'ble NGT, Principal Bench, New Delhi in OA No. 55/2019 (WZ), dated 12.02.2020.	We have noted and accepted it.

for

Authorized Signatory

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

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

1	a) Name of the Project	Aditya Aluminium (A Unit of Hindalco Industries Limited)
	b) Envt. /Forest Clearance Nos.	i. Env Clearance vide letter No: J-11011/136/2009-IA-II(I), Dated 29/11/2012, amendment dated 14 June 2013, 14 Aug 2018, 20 July 2020 & 12 Aug 2022 ii. Forest Clearance vide letter No: 8-27/2009-FC, 10.02.2011
2	Location/ Block/ Sub-Divn./ Dist/ State	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist.- Sambalpur Pin - 768 212, Odisha
3	Address for communication	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist.- Sambalpur Pin - 768 212, Odisha
4	Existing vegetation in the area/ region	At present 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, Anticardium occidental , Dalbergia latifolia, Heloptela, Thespesia , Bamboo, Butea monosperma 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 nos of trees felled through OFDC, Sambalpur (CKL) Division.
	b. Name and number of plant species still available in the area	Plant species and number will be counted after completion of all the project activities and will be submitted to your good office
	c. By protecting the area will indigenous stock come up	Nil
	d. Extent of greenbelt developed	1098 acres covered under greenbelt.
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 1098 acres of land has been covered under greenbelt.				

b) Plantation details (category wise &methodology used)

Year of plantation	Species Planted	Spacing	Height attained(feet)	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, Dalbergia latifolia, Sterculia foetida Heloptela, Thespsia populenea Bamboo etc	2*2	32'-36'	14.7 Ha	33% of the project area covered under Green Belt.
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	17'-20'	20.0 Ha	
2017-18		2*2	14'-18'	46.8 Ha	
2018-19		2*2	13'-15'	45.0 Ha	
2019-20		2*2	9'- 11'	82.96 Ha	
2020-21		2*2	7'-8'	80.94 Ha	
2021-22		2*2	5'-7'	63.67 Ha	
2022-23 2023-24		2*2 -	4'-6' 2'-3'	Species Enhancement in existing plantation area	
Total				444.63 Ha	

c) Survival of Plantation:

Total Plantation (No.)	7,38,030
Survival (No.)	6,64,227
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	85,00,000	126.00
13	2022-23	85,00,000	85,00,000	188.00
14	2023-24	85,00,000	40,00,000 (till Sep 23)	110.00

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

Forest officials from Divisional Forest Office, Sambalpur and Forest Range 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.

Samaresh 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 : 60
   b) Employment given so far : 59

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	378	18	404
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	32	14	46

7. Any other information : NIL

Sameer Nayak
(Authorised Signatory)

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

Report No.: Envlab/23-24/TR-01333 **Date: 30.04.2023**

STACK EMISSION MONITORING REPORT FOR APRIL-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **17.04.2023**
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 : **18.04.2023 TO 20.04.2023**

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)	-	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	109207.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	741.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	4.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	372.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	76.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.1	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

Approved by

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

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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

Report No.: Envlab/23-24/TR-01334 Date: 30.04.2023

STACK EMISSION MONITORING REPORT FOR APRIL-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **17.04.2023**
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 : **18.04.2023 TO 20.04.2023**

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	98.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	62689.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	739.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	350.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	80.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride as F	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	0.1	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

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

Report No.: Envlab/23-24/TR-02590 **Date: 31.05.2023**

STACK EMISSION MONITORING REPORT FOR MAY-2023

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 23.05.2023
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 : 24.05.2023 TO 26.05.2023

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)	-	92.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	105706.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	739.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.78
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	388.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	84.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.1	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

Approved by

Report No.: Envlab/23-24/TR-02591 **Date: 31.05.2023**

STACK EMISSION MONITORING REPORT FOR MAY-2023

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 23.05.2023
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 : 24.05.2023 TO 26.05.2023

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)	-	93.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.0
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	57381.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	737.4
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.76
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	365.0
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	81.0
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	0.1	0.0007
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

Approved by

Test Report No.: Envlab/23-24/TR-03620 **Date: 30.06.2023**

STACK EMISSION MONITORING REPORT FOR JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **19.06.2023**
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 : **20.06.2023 TO 22.06.2023**

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)	-	94.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.7
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	100345.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	733.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.41
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	374.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	80.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	0.1	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

Approved by

Test Report No.: Envlab/23-24/TR-03621 **Date: 30.06.2023**

STACK EMISSION MONITORING REPORT FOR JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **19.06.2023**
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 : **20.06.2023 TO 22.06.2023**

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)	-	92.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	53876.4
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	3.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	372.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	84.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	0.1	0.0007
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

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Visiontek Consultancy Services Pvt. Ltd.

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&
Microbiology Lab

Test Report No.:04737 **Date: 31.07.2023**

STACK EMISSION MONITORING REPORT FOR JULY-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **20.07.2023**
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 : **21.07.2023 TO 24.07.2023**

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)	-	**92.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**11.0**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**105480.3**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**740.0**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**4.6**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**376.0**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**78.2**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.10**
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	**0.1**	**0.0013**
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	**BDL**
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	**BDL**

Note: BDL: Below Detection Limit.

Reviewed by **Approved by**

Test Report No.:04738 **Date: 31.07.2023**

STACK EMISSION MONITORING REPORT FOR JULY-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **20.07.2023**
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 : **21.07.2023 TO 24.07.2023**

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)	**-**	**93.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	**-**	**9.7**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**55568.9**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**742.2**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**4.0**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	**-**	**352.0**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	**-**	**79.0**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	**-**	**0.10**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	**-**	**0.40**
Total Fluoride as F	mg/Nm^3	Calculation	**-**	**0.50**
Fluoride Emission	Kg/T	Calculation	**0.1**	**0.0007**
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	**-**	**BDL**
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	**BDL**

Note: BDL: Below Detection Limit.

Reviewed by **Approved by**

Test Report No.: 06865 **Date: 31.08.2023**

STACK EMISSION MONITORING REPORT FOR AUGUST-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **16.08.2023**
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 : **17.08.2023 TO 19.08.2023**

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	^{0}C	IS 11255: Part 3 :1985 (Reaff 2008)	-	**99.0**
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)	-	**112169.9**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	743
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**4.1**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**370.2**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**82.4**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.11**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.40**
Total Fluoride as F	mg/Nm^3	Calculation	-	**0.51**
Fluoride Emission	Kg/T	Calculation	**0.1**	**0.0014**
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	**BDL**
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	**BDL**

Note: BDL: Below Detection Limit.

Reviewed by **Approved by**

Test Report No.:06866 **Date: 31.08.2023**

STACK EMISSION MONITORING REPORT FOR AUGUST-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **16.08.2023**
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 : **17.08.2023 TO 19.08.2023**

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)	-	91.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	57802.9
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	741.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.72
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	354.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	82.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.1	0.00071
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

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Test Report No.: VCSPL/23-24/R-07835 **Date: 30.09.2023**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **15.09.2023**
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 : **16.09.2023 TO 18.09.2023**

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)	-	93.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.7
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	101211.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	739.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	5.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	368.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	80.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.1	0.0012
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed by

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Test Report No.: VCSPL/23-24/R-07836 **Date: 30.09.2023**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **15.09.2023**
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 : **16.09.2023 TO 18.09.2023**

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)	-	90.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	10.35
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	59730.9
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	738.5
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	4.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	358.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	78.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	0.1	0.00072
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

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Report No.: Envlab/23-24/TR-01335 **Date: 30.04.2023**

STACK EMISSION MONITORING REPORT FOR APRIL-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **20.04.2023**
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 : **21.04.2023 TO 24.04.2023**

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	**^{0}C**	**IS 11255: Part 3 :1985 (Reaff 2008)**	**-**	**112.0**
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)**	**-**	**2007743.2**
Barometric Pressure	**mm of Hg**	**IS 11255: Part 3 :1985 (Reaff 2008)**	**-**	**732.9**
Concentration of Particulate Matter as PM	**mg/Nm^3**	**IS 11255: Part 1 :1985 (Reaff 2003)**	**50**	**2.9**
Sulphur dioxide as SO_2	**mg/Nm^3**	**EPA Method 6C**	**-**	**72.2**
Oxides of Nitrogen as NO_x	**mg/Nm^3**	**EPA Method 7E**	**-**	**44.3**
Particulate Fluoride	**mg/Nm^3**	**Distillation followed by Ion Electrode method**	**-**	**0.11**
Gaseous Fluoride	**mg/Nm^3**	**Ion Electrode method**	**-**	**0.43**
Total Fluoride	**mg/Nm^3**	**Calculation**	**-**	**0.54**
Fluoride Emission	**Kg/T**	**Calculation**	**0.3**	**0.052**

Reviewed by **Approved by**

Report No.: Envlab/23-24/TR-01336 **Date: 30.04.2023**

STACK EMISSION MONITORING REPORT FOR APRIL-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **20.04.2023**
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 : **21.04.2023 TO 24.04.2023**

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)	-	110.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.3
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2017126.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.5
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.2
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	72.8
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	60.0
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	0.3	0.050

Reviewed by

Approved by

Report No.: Envlab/23-24/TR-02592 **Date: 31.05.2023**

STACK EMISSION MONITORING REPORT FOR MAY-2023

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 22.05.2023
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 : 23.05.2023 TO 25.05.2023

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)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2147460.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	2.87
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	75.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	48.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride	mg/Nm^3	Calculation	-	0.56
Fluoride Emission	Kg/T	Calculation	0.3	0.058

Reviewed by

Approved by

Report No.: Envlab/23-24/TR-02593 **Date: 31.05.2023**

STACK EMISSION MONITORING REPORT FOR MAY-2023

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 16.05.2023
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 : 17.05.2023 TO 19.05.2023

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)	-	108.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.1
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1779579.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.7
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.8
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	74.2
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	61.4
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.43
Total Fluoride	mg/Nm3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	0.3	0.048

Reviewed by

Approved by

Test Report No.: Envlab/23-24/TR-03622 **Date: 30.06.2023**

STACK EMISSION MONITORING REPORT FOR JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **22.06.2023**
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 : **23.06.2023 TO 26.06.2023**

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)	-	113.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2080134.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	73.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	46.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.46
Total Fluoride	mg/Nm^3	Calculation	-	0.57
Fluoride Emission	Kg/T	Calculation	0.3	0.057

Reviewed by

Approved by

Test Report No.: Envlab/23-24/TR-03623 **Date: 30.06.2023**

STACK EMISSION MONITORING REPORT FOR JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **23.06.2023**
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 : **24.06.2023 TO 26.06.2023**

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)	-	111.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.2
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1877781.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.6
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.2
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	73.6
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	63.4
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.44
Total Fluoride	mg/Nm3	Calculation	-	0.55
Fluoride Emission	Kg/T	Calculation	0.3	0.050

Reviewed by

Approved by

Test Report No.:04739 **Date: 31.07.2023**

STACK EMISSION MONITORING REPORT FOR JULY-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **21.07.2023**
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 : **22.07.2023 TO 25.07.2023**

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)	-	**9.6**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**2231801.5**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**737.1**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**3.4**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**74.4**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**45.5**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.10**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.41**
Total Fluoride	mg/Nm^3	Calculation	-	**0.51**
Fluoride Emission	Kg/T	Calculation	**0.3**	**0.055**

Reviewed by **Approved by**

Test Report No.:04740 **Date: 31.07.2023**

STACK EMISSION MONITORING REPORT FOR JULY-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **18.07.2023**
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 : **19.07.2023 TO 22.07.2023**

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)	-	**110.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**8.6**
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**1978548.4**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**735.2**
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**3.8**
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	**75.1**
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	**62.6**
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	**0.10**
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	**0.41**
Total Fluoride	mg/Nm3	Calculation	-	**0.51**
Fluoride Emission	Kg/T	Calculation	**0.3**	**0.048**

Reviewed by **Approved by**

Test Report No.: 06867 **Date: 31.08.2023**

STACK EMISSION MONITORING REPORT FOR AUGUST-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **21.08.2023**
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 : **22.08.2023 TO 24.08.2023**

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	^{0}C	IS 11255: Part 3 :1985 (Reaff 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2155761.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	739.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.51
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	71.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	46.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	0.3	0.051

Reviewed by VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD. Approved by

Test Report No.: 06868 **Date: 31.08.2023**

STACK EMISSION MONITORING REPORT FOR AUGUST-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **21.08.2023**
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 : **22.08.2023 TO 24.08.2023**

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)	-	106.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.0
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1864994.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	737.2
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	4.2
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	72.6
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	62.4
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	0.3	0.047

Reviewed by

Approved by

Test Report No.: VCSPL/23-24/R-07837 **Date: 30.09.2023**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **11.09.2023**
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 : **12.09.2023 TO 14.09.2023**

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	**^{0}C**	IS 11255: Part 3 :1985 (Reaff 2008)	**-**	**102.0**
Velocity of Flue Gas	**m/sec**	IS 11255: Part 3 :1985 (Reaff 2008)	**-**	**8.9**
Quantity of Gas Flow	**Nm^3/Hr**	IS 11255: Part 3 :1985 (Reaff 2008)	**-**	**2109632.5**
Barometric Pressure	**mm of Hg**	IS 11255: Part 3 :1985 (Reaff 2008)	**-**	**740.0**
Concentration of Particulate Matter as PM	**mg/Nm^3**	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**3.86**
Sulphur dioxide as SO_2	**mg/Nm^3**	EPA Method 6C	**-**	**73.2**
Oxides of Nitrogen as NO_x	**mg/Nm^3**	EPA Method 7E	**-**	**45.4**
Particulate Fluoride	**mg/Nm^3**	Distillation followed by Ion Electrode method	**-**	**0.11**
Gaseous Fluoride	**mg/Nm^3**	Ion Electrode method	**-**	**0.40**
Total Fluoride	**mg/Nm^3**	Calculation	**-**	**0.51**
Fluoride Emission	**Kg/T**	Calculation	**0.3**	**0.052**

Reviewed by **Approved by**

Test Report No.: VCSPL/23-24/R- 07838 **Date: 30.09.2023**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : **11.09.2023**
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 : **12.09.2023 TO 14.09.2023**

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)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.2
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1919527.9
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	738.6
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	3.6
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	74.4
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	61.6
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.40
Total Fluoride	mg/Nm3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.3	0.046

Reviewed by

Approved by P. Pati

Annexure-3

POTROOM ONLINE FUGITIVE MONITORING(HF) REPORT April '23 TO September '23

Apr-23		Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		Avg. in
		01-04-23	02-04-23	03-04-23	04-04-23	05-04-23	06-04-23	07-04-23	08-04-23	09-04-23	10-04-23	11-04-23	12-04-23	13-04-23	14-04-23	15-04-23	16-04-23	17-04-23	18-04-23	19-04-23	20-04-23	21-04-23	22-04-23	23-04-23	24-04-23	25-04-23	26-04-23	27-04-23	28-04-23	29-04-23	30-04-23		PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.104	0.191	0.0743	0.0873	0.112	0.0977	0.095	0.0503	0.0995	0.0286	0.0398	0.1195	0.1028	0.108	0.098	0.149	0.108	0.093	0.091	0.085	0.0173	0.0291	0.1054	0.138	0.064	0.142	0.0647	0.0285	0.049	0.199		0.092
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.212	0.248	0.2371	0.0901	0.1808	0.0817	0.185	0.1126	0.1563	0.0669	0.1453	0.1025	0.1241	0.062	0.086	0.054	0.027	0.012	0.025	0.007	0.0114	0.0034	0.0384	0.0135	0.046	0.007	0.0146	0.0023	0.007	0.032		0.080
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.627	0.514	0.4757	0.416	0.3627	0.3735	0.367	0.4402	0.4501	0.3983	0.3608	0.3273	0.3319	0.305	0.231	0.362	0.161	0.243	0.202	0.202	0.3267	0.2851	0.569	0.4549	0.532	0.429	0.2633	0.3773	0.371	0.51		0.376
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.39	0.241	0.1552	0.2065	0.1608	0.0936	0.137	0.0897	0.1687	0.0655	0.089	0.029	0.0968	0.001	0.001	0.036	0.009	0.006	0.037	0.044	0.0815	0.0052	0.1927	0.1867	0.065	0.121	0.2089	0.1037	0.14	0.204		0.112
																															Monthly Average(ppm)		0.165
																															Monthly Average (mg/M3)		0.137

May-23		Monday	Tuesday	Wednesda	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
		01-05-23	02-05-23	03-05-23	04-05-23	05-05-23	06-05-23	07-05-23	08-05-23	09-05-23	10-05-23	11-05-23	12-05-23	13-05-23	14-05-23	15-05-23	16-05-23	17-05-23	18-05-23	19-05-23	20-05-23	21-05-23	22-05-23	23-05-23	24-05-23	25-05-23	26-05-23	27-05-23	28-05-23	29-05-23	30-05-23	31-05-23	PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.005	0.1236	0.0801	0.024	0.0511	0.0089	0.0743	0.067	0.138	0.156	0.045	0.063	0.0432	0.0051	0.0306	0.0407	0.0629	0.07	0.0088	0.084	0.07	0.078	0.0098	0.163	0.029	0.0195	0.0023	0.0159	0.0453	0.0369	0.0138	0.054
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.0307	0.0176	0.0181	0.0068	0.0237	0.0038	0.0123	0.003	0.016	0.009	0.048	0.036	0.0699	0.0037	0.0035	0.00012	0.0054	0.0015	0.022	0.012	0.045	0.005	0.0277	0.009	0.0243	0.0111	0.046	0.0165	0.01	0.0022	0.0189	0.018
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.5877	0.5432	0.4295	0.3438	0.4579	0.4572	0.3105	0.301	0.245	0.277	0.238	0.349	0.156	0.2363	0.064	0.2457	0.2281	0.2912	0.1788	0.368	0.196	0.284	0.3069	0.321	0.2738	0.2879	0.2001	0.4062	0.2606	0.2762	0.2802	0.303
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.0069	0.2069	0.062	0.2395	0.2109	0.1321	0.1407	0.059	0.161	0.128	0.114	0.075	0.0928	0.0992	0.0636	0.0878	0.0707	0.0748	0.1083	0.115	0.082	0.037	0.0773	0.114	0.0205	0.1751	0.0695	0.0461	0.1218	0.1408	0.2162	0.108
																															Monthly Average(ppm)		0.121
																															Monthly Average (mg/M3)		0.100

Jun-23		Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesda	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
		01-06-23	02-06-23	03-06-23	04-06-23	05-06-23	06-06-23	07-06-23	08-06-23	09-06-23	10-06-23	11-06-23	12-06-23	13-06-23	14-06-23	15-06-23	16-06-23	17-06-23	18-06-23	19-06-23	20-06-23	21-06-23	22-06-23	23-06-23	24-06-23	25-06-23	26-06-23	27-06-23	28-06-23	29-06-23	30-06-23		PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.0127	0.0759	0.0606	0.0708	0.0572	0.0213	0.009	0.0032	0.0065	0.0137	0.0174	0.0671	0.0424	0.0135	0.0389	0.0012	0.0214	0.0182	0.0341	0.0197	0.0573	0.0661	0.0963	0.004	0.011	0.0007	0.002	0.013	0.0612	0.0087		0.031
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.0032	0.0055	0.0257	0.0026	0.0019	0.0098	0.043	0.1063	0.1138	0.0551	0.0532	0.0669	0.0251	0.0349	0.0556	0.0409	0.02554	0.0358	0.0253	0.0766	0.077	0.3173	0.3585	0.375	0.586	0.564	0.475	0.396	0.0693	0.0678		0.136
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.2574	0.1899	0.2412	0.2752	0.3406	0.1826	0.332	0.1854	0.1677	0.0517	0.2468	0.1661	0.2523	0.1282	0.2331	0.1715	0.2042	0.1407	0.3501	0.2057	0.3828	0.4679	0.6208	0.729	0.548	0.824	0.674	0.751	0.5146	0.5092		0.345
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.02	0.0538	0.1787	0.0508	0.0688	0.0674	0.212	0.0589	0.042	0.0599	0.067	0.1186	0.1094	0.1509	0.0538	0.0676	0.0094	0.0952	0.0874	0.0331	0.0324	0.0451	0.1583	0.042	0.001	0	0.182	0.187	0.068	0.0444		0.079
																															Monthly Average(ppm)		0.148
																															Monthly Average (mg/M3)		0.123

Jul-23		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
		01-07-23	02-07-23	03-07-23	04-07-23	05-07-23	06-07-23	07-07-23	08-07-23	09-07-23	10-07-23	11-07-23	12-07-23	13-07-23	14-07-23	15-07-23	16-07-23	17-07-23	18-07-23	19-07-23	20-07-23	21-07-23	22-07-23	23-07-23	24-07-23	25-07-23	26-07-23	27-07-23	28-07-23	29-07-23	30-07-23	31-07-23	PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.0454	0.0763	0.0632	0.0036	0.0925	0.0167	0.0189	0.008	0.019	0.0057	0.0242	0.0169	0.0159	0.0272	0.0126	0.0042	0.049	0.0239	0.0333	0.008	0.0084	0.0095	0.0056	0.011	0.0101	0.003	0.0095	0.0171	0.0126	0.0075	0.0076	0.021
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.0725	0.1257	0.0596	0.0674	0.1084	0.4332	0.231	0.377	0.116	0.0835	0.0666	0.1201	0.1117	0.1228	0.2957	0.285	0.1832	0.1426	0.1214	0.196	0.0776	0.1845	0.0909	0.111	0.154	0.31	0.2017	0.2016	0.1504	0.4139	0.2456	0.176
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.5715	0.1257	0.4614	0.4342	0.5527	0.7285	0.5954	0.697	0.635	0.4496	0.519	0.5765	0.497	0.545	0.7043	0.7043	0.7517	0.5772	0.5723	0.523	0.4727	0.5728	0.3469	0.533	0.4361	0.438	0.4464	0.556	0.5843	0.5897	0.5921	0.542
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.0004	0.0269	0.003	0.0433	0.0016	0.1744	0.3681	0.412	0.222	0.0298	0.108	0.1624	0.1751	0.1099	0.1435	0.4189	0.2072	0.1969	0.1549	0.096	0.0985	0.1677	0.1511	0.15	0.0136	0.016	0.0664	0.0417	0.5843	0.0818	0.0784	0.145
																															Monthly Average(ppm)		0.221
																															Monthly Average (mg/M3)		0.184

Aug-23		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Avg. in
		01-08-23	02-08-23	03-08-23	04-08-23	05-08-23	06-08-23	07-08-23	08-08-23	09-08-23	10-08-23	11-08-23	12-08-23	13-08-23	14-08-23	15-08-23	16-08-23	17-08-23	18-08-23	19-08-23	20-08-23	21-08-23	22-08-23	23-08-23	24-08-23	25-08-23	26-08-23	27-08-23	28-08-23	29-08-23	30-08-23	31-08-23	PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.003	0.0008	0.0005	0.0013	0.0059	0.0219	0.0014	0.0106	0.009	0.0159	0.0047	0.002	0.0072	0.0032	0.0021	0.003	0.0082	0.0061	0.0113	0.0075	0.0041	0.0092	0.0056	0.0167	0.0038	0.002	0.003	0.008	0.0024	0.0039	0.0011	0.006
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.4756	0.5284	0.4228	0.5094	0.3226	0.0887	0.0875	0.0715	0.0901	0.0519	0.0885	0.0775	0.0983	0.0918	0.1323	0.069	0.1782	0.1663	0.1888	0.0623	0.0734	0.0433	0.099	0.0788	0.1482	0.141	0.181	0.1919	0.1614	0.1558	0.2875	0.173
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.6785	0.4973	0.5468	0.5293	0.6715	0.6379	0.6919	0.5672	0.5227	0.4711	0.5918	0.496	0.612	0.4568	0.5601	0.606	0.666	0.5838	0.6347	0.5387	0.5489	0.5451	0.5702	0.5693	0.6428	0.557	0.499	0.4687	0.5563	0.4164	0.5361	0.564
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.2509	0.1042	0.2413	0.2811	0.3219	0.1251	0.524	0.1805	0.036	0.0009	0.2072	0.1355	0.1869	0.1028	0.1454	0.084	0.314	0.099	0.1533	0.0288	0.0799	0.0329	0.0509	0.0678	0.0691	0.021	0.036	0.0585	0.1045	0.0101	0.0038	0.131
																															Monthly Average(ppm)		0.218
																															Monthly Average (mg/M3)		0.182

Sep-23		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
		01-09-23	02-09-23	03-09-23	04-09-23	05-09-23	06-09-23	07-09-23	08-09-23	09-09-23	10-09-23	11-09-23	12-09-23	13-09-23	14-09-23	15-09-23	16-09-23	17-09-23	18-09-23	19-09-23	20-09-23	21-09-23	22-09-23	23-09-23	24-09-23	25-09-23	26-09-23	27-09-23	28-09-23	29-09-23	30-09-23		PPM
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.1606	0.0023	0.0004	0.0007	0.0008	0.0032	0.0026	0.002	0.0017	0.002	0.0017	0.199	0.1837	0.4032	0.192	0.296	0.375	0.411	0.282	0.337	0.165	0.159	0.083	0.158	0.169	0.241	0.155	0.261	0.240	0.330		0.161
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.2848	0.0962	0.196	0.3444	0.4516	0.3951	0.38	0.2384	0.2033	0.278	0.2412	0.389	0.4061	0.4436	0.483	0.3965	0.2066	0.2331	0.2547	0.2407	0.3191	0.3175	0.2388	0.2637	0.2373	0.1867	0.2039	0.215	0.2039	0.2685		0.287
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.5504	0.4561	0.6011	0.5036	0.655	0.4581	0.5722	0.4156	0.5887	0.5653	0.5408	0.506	0.6485	0.5353	0.5451	0.6365	0.5886	0.4699	0.5955	0.4826	0.652	0.5666	0.658	0.5303	0.7074	0.4367	0.6225	0.4884	0.4874	0.4437		0.550
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.1712	0.0004	0.084	0.186	0.3149	0.1622	0.131	0.0566	0.1551	0.0437	0.0899	0.028	0.1635	0.1369	0.1858	0.183	0.1049	0.1917	0.1893	0.1622	0.2091	0.3186	0.4665	0.2563	0.2492	0.1576	0.2179	0.1325	0.1939	0.1016		0.168
																															Monthly Average(ppm)		0.292
																															Monthly Average (mg/M3)		0.243

ANNEXURE-4

STATUS OF UTILISATION OF COAL ASH (FLY ASH) for the period Apr-23 to Sept-2023

Sl. No.	Name and address of the TPP	Month	Power Plant Installed Capacity(MW)	Quantity of Coal consumed during the reporting period	Quantity of fly ash generated (MT)	Capacity of dry fly ash storage Silos (MT)	Disposal Method (Dry/HCSD/LCSD)	Modes of Utilisation (MT)														Others	Ash utilised for the reporting Period	%Ash utilised for the reporting Period	Remarks
								Fly ash based Products (Bricks/blocks/tiles/fibre cement sheets,pipes/boards/panels etc)	Cement Manufacturing	Ready mix concrete	Ash and Geo-Polymer based constuction material	Manufacturing of sintered of cold bonded ash Aggregates	Construction of roads/road and flyover imbarkment	Construction of Dams	Filling of Low lying areas	Filling of mine voids	Use Overburden dumps	Agriculture	Construction of shoreline protection structures in coastal districts	Export of ash to other countris				
1	Aditya Aluminium (A Division of M/s Hindalco Industries Ltd.), PO- Lapanga, Dist.: Sambalpur Odisha-768212	Apr-23	900	350874	138823	3 X 2500 (7500)	HCSD	0	136691.48	0	0	0	25.86	0	0	0	0	0	0	0	0	136717.34	98.48	
2		May-23	900	352910	138257	3 X 2500 (7500)	HCSD	624.63	133601.3	0	0	0	4325	0	0	0	0	0	0	0	0	138550.92	100.21	
3		Jun-23	900	338643	134193	3 X 2500 (7500)	HCSD	3234.53	114511.2	0	0	0	0	0	0	0	0	0	0	0	0	117745.7	87.74	
4		Jul-23	900	377763	146206	3 X 2500 (7500)	HCSD	1016.36	92200.7	0	0	0	0	0	6415	0	0	0	0	0	0	99632.03	68.14	
5		Aug-23	900	3,78,027	140390	3 X 2500 (7500)	HCSD	746.86	89117.98	0	0	0	0	0	17921.64	0	0	0	0	0	10815	118601.48	84.48	
6		Sep-23	900	3,60,895	131187	3 X 2500 (7500)	HCSD	615.64	97389.98	0	0	0	0	0	15268.00	0	0	0	0	0	4450	117723.62	89.74	

STATUS OF UTILISATION OF COAL ASH (BOTTAM ASH) for the period Apr-23 to Sept-2023																								
Sl. No.	Name and address of the TPP	Month	Power Plant Installed Capacity(MW)	Quantity of Coal consumed during the reporting period	Quantity of Bottom generated (MT)	Capacity of bottom ash storage Silos (MT)	Disposal Method (Dry/HCSD/LCSD)	Modes of Utilisation (MT)													Others	Bottom Ash utilised for the reporting Period	% Bottom Ash utilised for the reporting Period	Remarks
								Bottom Ash based Products (Bricks/blocks/tiles/fibre cement sheets,pipes/boards/panels etc)	Cement Manufacturing	Ready mix concrete	Ash and Geo-Polymer based constuction material	Manufacturing of sintered of cold bonded ash Aggregates	Construction of roads/road and flyover imbarkment	Construction of Dams	Filling of Low lying areas	Filling of mine voids	Use Overburden dumps	Agriculture	Construction of shoreline protection structures in coastal districts	Export of ash to other countris				
1	Aditya Aluminium (A Division of M/s Hindalco Industries Ltd.), PO- Lapanga, Dist.: Sambalpur Odisha-768212	Apr-23	900	350874	7411.5	3000	Dry	0	0.00	0	0	0	0	0	7411.5	0	0	0	0	0	0	7412	100.00	
2		May-23	900	352910	7403.0	3000	Dry	0	0	0	0	0	0	0	7403	0	0	0	0	0	0	7403	100.00	
3		Jun-23	900	338643	7087.8	3000	Dry	0	0	0	0	0	0	0	7087.8	0	0	0	0	0	0	7088	100.00	
4		Jul-23	900	377763	6467.3	3000	Dry	0	0	0	0	0	0	0	6467.3	0	0	0	0	0	0	6467	100.00	
5		Aug-23	900	3,78,027	5791.7	3000	Dry	0	0	0	0	0	0	0	5791.7	0	0	0	0	0	0	5792	100.00	
6		Sep-23	900	3,60,895.03	5927.0	3000	Dry	0	0	0	0	0	0	0	5927.0	0	0	0	0	0	0	5927	100.00	

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: VCSPL/23-24/TR-05925 **Date: 03.07.2023**

ASH ANALYSIS REPORT JUNE-2023

Name of Industry : **M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga.**
Sampling Location : **FA-01: CPP Fly Ash Silo**
Date of Sampling : **12.06.2023**
Date of Analysis : **13.06.2023 TO 19.06.2023**
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	%	0.93	mg/kg	9300
3	Al_2O_3	%	22.2	mg/kg	222000
4	SiO_2	%	51.1	mg/kg	511000
5	P_2O_5	%	0.022	mg/kg	220
6	SO_3	%	2.5	mg/kg	25000
7	K_2O	%	0.80	mg/kg	8000
8	CaO	%	4.3	mg/kg	43000
9	TiO_2	%	0	mg/kg	---
10	MnO	%	0.24	mg/kg	2400
11	Fe_2O_3	%	9.1	mg/kg	91000
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	%	0.0163	mg/kg	163
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	5.2861	mg/kg	52861
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.065	mg/kg	650
9	Nickel as Ni	%	0.084	mg/kg	840
10	Zinc as Zn	%	0.0522	mg/kg	522
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Prepare by: **Verified by:**

Ref: VCSPL/23-24/TR-05926 **Date: 03.07.2023**

ASH ANALYSIS REPORT JUNE-2023

1. **Name of Industry : M/s Hindalco Industries Limited (Unit- Aditya Aluminium), Lapanga.**
   Sampling Location : BA-01: CPP Bottom Ash Silo
2. **Date of Sampling : 12.06.2023**
3. **Date of Analysis : 13.06.2023 TO 19.06.2023**
4. **Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.**

Sl. No.	Parameters	Unit	Analysis Results	Unit	Analysis Results
			BA-01		BA-01
Chemical Analysis					
1	Na_2O	%	0.27	mg/kg	2700
2	MgO	%	2.4	mg/kg	24000
3	Al_2O_3	%	25.9	mg/kg	259000
4	SiO_2	%	50.2	mg/kg	502000
5	P_2O_5	%	0.023	mg/kg	230
6	SO_3	%	11.5	mg/kg	115000
7	K_2O	%	0.95	mg/kg	9500
8	CaO	%	33.2	mg/kg	332000
9	TiO_2	%	0	mg/kg	
10	MnO	%	0.37	mg/kg	3700
11	Fe_2O_3	%	7.4	mg/kg	74000
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	%	0.0157	mg/kg	157
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	6.2	mg/kg	62000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.028	mg/kg	280
9	Nickel as Ni	%	0.092	mg/kg	920
10	Zinc as Zn	%	0.069	mg/kg	690
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Prepare by: **Verified by:**

Mitra S. K. Private Limited

Plot No-687/2428, Ekamra Villa Square,
Jaydev Vihar, 1st Floor, IRC Village,
Bhubaneswar, Khordha, Odisha-751015
[CIN: U51909WB1956PTC023037]

T :(0674) 2360917, 9777450189
F : (0674) 2362916

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/600
Date : 11.07.2023
Sample No. : MSKGL/ED/2023-24/06/00001
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 27.06.2023

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	7.46
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	172
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	22
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	14
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	0.32
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.42
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	10
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	0.2
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	14
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	80
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	16
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	240
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	3.1
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	82

Report Prepared by:

MITRA S.K. PRIVATE LIMITED BBSR

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Mitra S. K. Private Limited

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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/601
Date : 11.07.2023
Sample No. : MSKGL/ED/2023-24/06/00002
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 27.06.2023

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	7.37
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	102
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
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	17
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	4.2
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	2
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	6
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	30
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	7.2
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	121
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	4.2
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	60

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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/602
Date : 11.07.2023
Sample No. : MSKGL/ED/2023-24/06/00003
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 27.06.2023

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	7.29
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	262
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	34
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	24
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	0.32
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.3
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	24
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	146
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	18
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	360
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	5.2
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	96

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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/603
Date : 11.07.2023
Sample No. : MSKGL/ED/2023-24/06/00004
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 27.06.2023

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	7.22
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	165
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
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	20
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	0.37
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.27
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	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	14
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	110
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	18
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	240
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	5.1
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	78

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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/502
Date : 12.10.2023
Sample No. : MSKGL/ED/2023-24/09/00001
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 28.09.2023

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	7.40
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	154.0
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	26.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	16.0
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	0.39
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.46
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	9.6
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	0.3
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	21.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	96.0
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	19.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	230.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	4.1
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	84.0

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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/503
Date : 12.10.2023
Sample No. : MSKGL/ED/2023-24/09/00002
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 28.09.2023

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	7.23
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	142.0
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	20.0
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	6.6
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	3.1
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	8.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	34.0
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 Ph 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	9.5
25.	Conductivity in us/cm	---	---	APHA 23rd Edition, 2510B	210.0
26.	Potassium as K in mg/l	---	---	APHA 23rd Edition, 3500 K B 2017	3.6
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

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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/504
Date : 12.10.2023
Sample No. : MSKGL/ED/2023-24/09/00003
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 28.09.2023

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	7.15
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	306.0
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	40.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	62.0
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	0.31
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.42
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	7.7
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	22.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	132.0
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	16.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	290.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	3.8
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	136.0

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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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/505
Date : 12.10.2023
Sample No. : MSKGL/ED/2023-24/09/00004
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 28.09.2023

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	7.20
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	24.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	18.0
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	0.35
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.22
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	7.7
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	19.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	92.0
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	16.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	210.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	4.6
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 BBSR

Mitra S. K. Private Limited
Authorized Signatory

Compliance Status from April- 23 to September- 23

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'23 to September'23 is 0.087 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'23 to September'23 is 7.95 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 aluminum fluoride should be explored.	The Carbon part of SPL is being supplied to M/s Green Energy Resources, Sambalpur & M/s Regrow Transo Pvt. Ltd. Jharsuguda for reprocessing/detoxification, in this way the carbon part is completely recycled. M/s Resustainability Ltd has established the facility for detoxification and disposal of SPL refractory as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. SPL refractory part is being disposed in CHWTSDF. Around 12607.75 MT SPL Refractory part and 1717.9 MT Carbon part is in stock till end of September- 2023 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We have got the OSPCB Consent/ Permission for disposal of SPL refractory materials through the Actual users authorized by OSPCB, for co-processing in Cement kiln/disposal in CHWTSDF. Besides, we are also exploring the
6	The SPL should be disposed in secured landfill.	

		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 in 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-	Complied

	circulation system depending upon site specific environmental situation.	
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

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. The implementation of this policy is the responsibility of respective heads of units with the monitoring and tracking done by the Apex Sustainability Committee under the guidance of the Managing Director.

Satish Pai
MD, Hindalco Industries Limited
Date : 9th August, 2022

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, Mobile repairing, Micro irrigation Bike repairing, Soft Toy, Driving, Grafting, Organic Farming (Agriculture) and Tailoring has been instituted last months.
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 7,38,030 saplings inside the factory premises till September-2023. Also, the industry has started plantation in the vacant spaces of the surrounding and have been taking care of 30,000 nos of saplings to the villagers in the planted in the surrounding villages for FY-23-24.
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. Drinking water supply to 72 nos of hamlets in peak summer, 01 nos of Blood donation camps, 2 nos of Village Mandaps and 1450 nos of cataract surgeries have been done. SHG training on capacity building program for 1 nos have been conducted. There are 55 nos of sprinkler provided to 55 nos of beneficiaries. TB patients supported 60 nos in village. MDD program benefitted 115 nos. National nutrition week celebrated with 209 nos have been benefitted. World health day celebrated with 170 participants have joined. Menstrual hygiene day 70 nos

		of participants joined. Blood donation 132 nos of participated.
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 Sarapanchs, RWSS, BDO and Block chairman, Rengali of 6 nos of Gram Panchayats in peak summer. Drinking water supply to 16 nos of revenue villages and 86 nos of hamlets and main villages also got the facility catering 25000 nos of villagers with 3000 households.
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, and awareness program at all villages catering benefit to 1796 nos of beneficiaries. First Aid centre has facility to local areas for free treatment by reputed doctors. Provided free treatment facility to more than 2161 nos of local people with free treatment, medicine, and consultation. Telemedicine also supported to 3456 nos of beneficiaries in villages.
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 meets 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 SHGs such as Spice units, Oil Processing units and paper cup making units, Vegetable farming, Phenol making, Hand wash making, Duckery, 7 nos of poultry units, Tailoring, to the 200 nos of SHGs comprising of 2125 nos of women and 7 Farmers Group adopted by Industry. CSR has mobilised 15.99 Lakh for SHG entrepreneurship program. There are 8 nos of villages girls have been placed in ABFRL.
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 festivals like Nuakhai, Sheetal Sasthi, Astaprahari and sports like Football, Badminton and Cricket tournament with the locals. We conducted women sports, school sports programs at different villages every year as a part of promotion of Rural sports. The nearby 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. Gayatri Sahu one blind graduate working with CSR team since three years and all programs are conducted regarding physically challenged persons in Block level every year.

Expense incurred under Enterprise Social Commitment till September- 2023:

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 Mar 2022	8.81	
10	CSR expenses in Education (EDU)	0.33	
11	CSR expenses in in & around in Environment and sustainable Livelhood	0.57	
12	CSR expenses in in & around in Healthcare in Hirakud areas also	1.06	
13	CSR expenses in in & around in social causes	0.40	
14	CSR expenses in in & around in Rural & Development projects	0.26	
15	Aditya Expenses from Oct-22 to March-23	0.76	
16	Hirakud power and Smelter Expenses from Oct-22 to Mar-23	0.87	
17	Aditya Expenses from Apr-23 to Sept-23	1.67	
18	Hirakud power and Smelter Expenses from Apr-23 to Sept-23	0.90	
Total Expense		**68.17**	

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 playground or mini stadium in Bomaloi village, as stated in the minutes of public consultation held before environmental clearance.
e) Free distribution of schoolbooks & 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.

8 NOVEMBER 2023

CSR REPORT APR- OCT FY 2023-24

EDUCATION		Total Till Date	
S. No	**Name of the Activity**	**Activity**	**Beneficiaries**
1	Science Exhibition	1	165
2	Teacher's Training Program on IT & Coding	1	47
3	Support of Desk & Bench	273	1227
4	Provision of New Bus for Jamankira High School	1	497
5	Inaugural Function of Desk & Bench Support	1	165
6	Inaugural Function of Govt. HSS, Lapanga	1	237
7	Observation of Gangadhar Meher Jayani	1	235
8	School Level Competition	4	57
9	Independence Day	72	4432
10	Science Seminar & Drama	1	165
11	Support for Interview Process	1	35
12	Support for Block level sports selection	2	120
13	Support for District Level Sports Selection.	1	45
14	Global Hand Wash Day	1	59
15	Awareness on POCSO	1	67
16	Awareness on Cyber Security	1	250
17	Exposure to STEM Education	1	8
18	Block Level Science Drama	1	165
19	SMC Meeting	1	15
20	Career Counselling	2	110
21	Awareness on Single Use Plastic	6	156
22	Awareness on Opening of + 2 Stream at Lapanga	1	45
23	Drawing Competition	1	5
24	Promotion of Yoga & Leadership Development	1	97
25	Observation of World Environment Day	1	87
26	Observation of Global Hand Wash Day	1	59
27	GET Emersion Program & ABGLP	3	46
28	Visit of Niti Ayog	1	127
	Total	**383**	**8723**

Lapanga High School +2 Inauguration by DEO

Lahmani High School Desk Bench Inauguration by DEO

Rengali Inter School Independence Day Celebration

Awareness Session in Lapanga High School

Block Level Science Exhibition

Desk Bench distribution in 17 Schools

HEALTH		Total Till Date	
S. No	**Name of the Activity**	**Activity**	**Beneficiaries**
1	Community Dispensary	7	2403
2	Status of Vision Centre	8	1904
3	Eye screening Camp	76	1598
4	Cataract Operation	165	264
7	Menstrual Hygiene Day	1	77
8	Periodical Health Camp	4	31
9	Drinking Water Supply	1	12000
11	Awareness on Eye Care & Support service	54	891
17	Observation of BFW	1	97
18	Observation of Nutrition Week	4	97
21	Observation of Iron Deficiency Day	1	75
24	Blood Donation Camp	1	132
25	Observation of World Menstrual Hygiene Day	1	77
26	Awareness on TB	38	409
27	Swasthya Vahini Mobile Telemedicine	7	3276
32	Awareness on sun stroke	9	87
33	Support to Blood Donation Camp	0	0
34	In house training on Fire Safety	1	8
35	Inuguration of MDA	1	12
36	Cleanness Drive	1	48
37	Observation of World Food Day	1	78
	Total	**382**	**23564**

TB Awareness Program Niramaya Ni-Kshay

Water Tanker Jal Vahini during Peak

World Malaria Day Awareness Camp

Swasthya Vahini Primary Health Care Mobile Telemedicine Unit

Blood Donation Camp

First Aid Centre for free Primary Healthcare Static Clinic

SUSTAINABLE LIVELIHOOD		Total Till Date	
S. No	**Name of the Activity**	**Activity**	**Beneficiaries**
1	SHG Mobilization	85	729
2	Farmer Interaction Meeting	50	1344
3	Training on Vegetable Cultivation & Organic Pest Management	1	47
4	SHG Federation Meeting	5	95
5	Study on Sustainable Agriculture	1	32
6	Training on Phenyl Marketing & branding	1	11
7	Meeting with ORMAS.ICDS,OLM Meeting	4	33
8	Turmeric	27	27
9	Startup Poultry Farm	3	42
11	Mixture & Namkeen	10	10
13	Paper cup & Plate Entrepreneurship	1	10
14	Certificate Distribution Program	1	60
15	Tailoring Unit(ORMAS School & AWC Centre	1	17
16	Training on Goat Rearing	1	31
18	Training on Driving	1	5
21	Exposure visits to ABRLF	1	50
22	All the best for ABRLF	1	17
24	Safety Jacket Tailoring Unit	10	10
26	Hand Wash Unit	1	10
27	Mixture & Namkeen	1	9
28	Training on Mushroom	2	63
29	Phenyl	1	10
30	Black Roice Beneficiary	1	27
31	ABGLP Visit	1	5
32	Awareness on Registration Farmer's ID	7	93

33	Awareness on Horticulture/ Agri schemes	6	62
34	Visit of Mission Shakti & Veterinary Dept	2	7
35	Farmer's Id preparation of SHG Members	1	110
36	Visit of Niti Ayog	1	127
39	Candidates Mobilization for ABRLF	14	123
40	Counselling season on Vocational Training & engagement	1	50
41	Training on Soft Toys	2	2
43	Paper Thunga Unit	1	10
45	Awareness on social Security Scheme	6	168
46	Meeting on new scope of entrepreneurship	15	11
48	GET Visit	2	65
52	Awareness on Project Sichai	3	15
56	Employment of 6 Widow of RR Colony	6	6
	Total	**278**	**3543**

Utility Boxes Given to SHGs

Regular SHGs Meetings

Women Advance Tailoring Training Certificate Course in partnership with ORMAS and SAHI

Vegetable Cultivation

Farmer Supported with Sprinkler Irrigation

SOCIAL CAUSE		Total Till Date	
S. No	**Name of the Activity**	**Activity**	**Beneficiaries**
1	World Health Day	1	110
2	Inuguration of Samaleswari Temple	1	2200
3	Inuguration & Puja of Samaleswari	1	2500
4	Inter District Cricket Tournament	1	700
5	Puja & Nam Yagnya	2	1550
6	Hanuman Temple Pratishtha	1	1700
7	Karama Puja	1	137
8	Exceptional Achievement	1	1
9	Celebration of Kumar Purnima	1	1550
	Total	**10**	**10448**

Supported Ramchandranagar Hanuman Temple Pratistha

Dhorropani Namajagya

Supported Cricket Tournament Rengali Priemer League

World Environment Day Celebration

Niti Aayog Delegation Visit

INFRASTRUCTURE		Total Till Date	
S. No	**Name of the Activity**	**Activity**	**Beneficiaries**
1.	Bhumi Puja of Bhagabat Tungi & club	2	47
2.	Mandap Dhorropani and Bomoloi	2	1500
	Total	4	1547

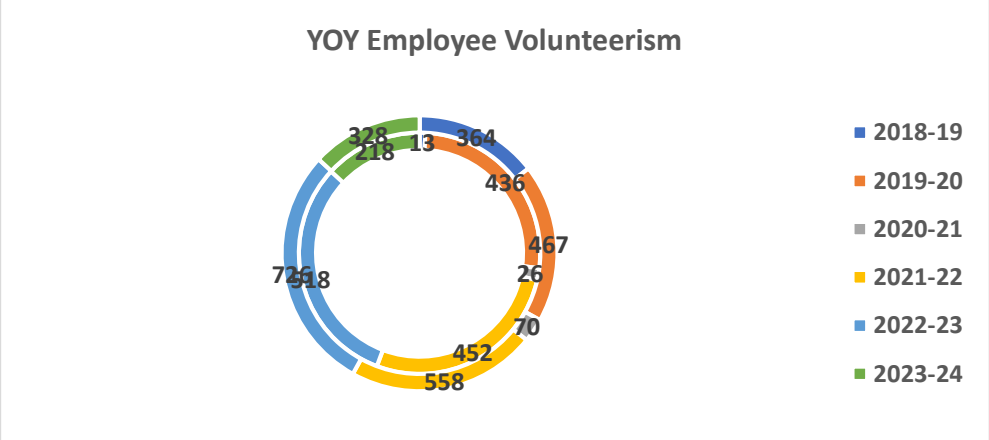
Bomoloi mandap

Dhorropani Mandap

Jangla Temple WIP

Pondoloi Temple Construction WIP

Employee Volunteerism



Employee Volunteerism						
KPIs	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
No. of Employees	13	436	26	452	518	218
No. of Manhours	364	467	70	558	726	328

Blood Donation Camp

Raksha Bandhan Celebration at Old Age Home

Ref: VCSPL/23-24/TR-05915 **Date: 03.07.2023**

METEOROLOGICAL MONITORING REPORT JUNE-2023

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

Date	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed Km/h		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Jun-23	40.0	27.0	85.0	72.0	4.7	0.6	NNW	0
2-Jun-23	42.0	29.0	89.0	70.0	5.3	1.7	S	0
3-Jun-23	40.0	29.0	90.0	74.0	4.4	1.7	NW	0
4-Jun-23	40.0	27.0	84.0	68.0	6.9	1.4	NNE	0
5-Jun-23	40.0	27.0	87.0	70.0	5.3	1.7	NW	0
6-Jun-23	42.0	28.0	76.0	80.0	4.2	0.3	SW	0
7-Jun-23	41.0	27.0	71.0	82.0	4.2	0.3	NW	0
8-Jun-23	42.0	24.0	79.0	78.0	5.8	0.3	NNW	0
9-Jun-23	38.0	25.0	80.0	75.0	4.7	0.8	NNE	0
10-Jun-23	38.0	28.0	82.0	82.0	7.5	0.8	N	0
11-Jun-23	43.0	27.0	86.0	79.0	5.3	1.1	NNE	0
12-Jun-23	44.0	29.0	84.0	78.0	6.6	1.4	NNW	0
13-Jun-23	34.0	26.0	81.0	75.0	6.4	1.1	NNW	0
14-Jun-23	34.0	28.0	88.0	77.0	6.9	2.5	NNW	0
15-Jun-23	42.0	27.0	78.0	72.0	8.9	2.2	N	0
16-Jun-23	45.0	29.0	80.0	78.0	5.8	1.9	NNE	0
17-Jun-23	44.0	29.0	83.0	75.0	5.3	0.6	NNW	0
18-Jun-23	42.0	30.0	82.0	70.0	2.8	0.6	ENE	0
19-Jun-23	37.0	23.0	89.0	71.0	3.9	1.1	NNW	0
20-Jun-23	38.0	20.0	86.0	73.0	3.3	1.7	NW	0
21-Jun-23	38.0	20.0	87.0	74.0	7.8	1.9	NW	2.4
22-Jun-23	36.0	24.0	85.0	72.0	5.3	2.2	NW	0
23-Jun-23	31.0	24.0	89.0	68.0	4.7	1.7	NNW	0.8
24-Jun-23	30.0	26.0	81.0	70.0	4.4	2.2	NW	20.0
25-Jun-23	30.0	25.0	88.0	66.0	4.7	1.9	NW	92.0
26-Jun-23	30.0	26.0	87.0	64.0	4.7	1.9	NW	192.2
27-Jun-23	33.0	25.0	85.0	60.0	4.7	3.0	NW	33.2
28-Jun-23	34.0	28.0	77.0	66.0	6.6	2.8	NNW	0
29-Jun-23	36.0	28.0	76.0	68.0	6.4	2.2	NNW	0
30-Jun-23	36.0	28.0	84.0	67.0	5.3	1.7	NNW	0
AVERAGE	37.70	26.2	83.3	72.5	5.4	1.5	0.0	340.6

Prepared by: **Verified by:**

Ref: VCSPL/23-24/TR-08327 **Date: 14.10.2023**

METEOROLOGICAL MONITORING REPORT SEPTEMBER-2023

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

Date	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed Km/h		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Sept-23	32.9	26.9	90.0	56.0	9.2	2.5	W	0.0
2-Sept-23	33.4	27.1	91.0	55.0	8.3	2.3	NE	0.8
3-Sept-23	31.6	27.8	94.0	73.0	12.4	3.4	NE	2.4
4-Sept-23	32.8	26.9	90.0	73.0	10.5	2.9	NNW	33.2
5- Sept-23	30.6	24.1	85.0	78.0	10.9	3.0	SW	34.6
6- Sept-23	31.4	25.3	89.0	77.0	9.8	2.7	SSW	10.2
7- Sept-23	30.5	26.2	90.0	55.0	13.4	3.7	S	7.2
8- Sept-23	31.9	24.8	92.0	64.0	14.2	3.9	W	4.4
9- Sept-23	30.5	25.9	91.0	68.0	10.6	2.9	NW	3.2
10- Sept-23	32.1	26.7	90.0	62.0	12.5	3.5	NNW	6.2
11- Sept-23	30.6	27.1	87.0	71.0	10.4	2.9	W	0.0
12- Sept-23	32.8	28.5	88.0	76.0	8.6	2.4	NNW	37.8
13- Sept-23	31.5	26.9	89.0	65.0	8.2	2.3	E	7.6
14- Sept-23	29.8	24.8	90.0	55.0	12.4	3.4	WNW	66.4
15- Sept-23	28.7	25.9	92.0	78.0	17.6	4.9	W	12.2
16- Sept-23	29.5	27.4	91.0	78.0	12.5	3.5	W	2.4
17- Sept-23	30.5	25.3	92.0	73.0	11.6	3.2	N	0.0
18- Sept-23	30.7	26.9	90.0	68.0	7.6	2.1	NNE	0.0
19- Sept-23	31.1	27.4	88.0	70.0	6.2	1.7	NNE	0.0
20- Sept-23	29.9	25.3	89.0	85.0	10.8	3.0	ENE	10.4
21- Sept-23	27.4	24.6	85.0	70.0	9.3	2.6	NW	44.6
22- Sept-23	30.1	23.8	90.0	67.0	18.4	5.1	NW	0.0
23- Sept-23	32.4	24.2	86.0	66.0	11.4	3.2	NNW	19.4
24- Sept-23	30.9	25.9	86.0	67.0	10.6	2.9	N	7.8
25- Sept-23	30.4	24.8	77.0	59.0	7.8	2.2	W	11.0
26- Sept-23	31.5	26.1	73.0	58.0	6.8	1.9	NNW	0.0
27- Sept-23	31.6	27.4	79.0	57.0	7.5	2.1	NE	0.0
28- Sept-23	31.3	25.8	68.0	58.0	5.3	1.5	NE	0.0
29- Sept-23	32.7	26.7	69.0	59.0	3.1	0.9	NE	45.2
30- Sept-23	30.1	24.2	70.0	61.0	5.4	1.5	SE	0.0
AVERAGE	31.0	26.0	86.0	66.7	10.1	2.8	0	367

Prepared by: **Verified by:**

Ref: VCSPL/23-24/TR-05916 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

Date	PARAMETERS												
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2023	51.1	30.9	15.6	16.2	< 4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	46.2	31.5	16.4	18.1	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	54.3	29.7	15.4	15.4	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	50.2	30.2	17.4	16.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	47.1	27.1	14.7	18.7	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	48.6	28.9	15.6	16.6	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	52.2	31.6	16.8	17.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	50.1	30.8	18.5	17.1	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	53.5	32.8	16.5	15.6	<4.0	0.37	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	51.7	28.8	14.7	15.2	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	52.4	26.1	15.6	18.6	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	54.8	29.1	15.9	17.9	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	52.4	30.3	16.5	16.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	56.7	31.3	15.3	17.3	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	53.2	28.4	18.2	19.4	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	50.2	29.9	15.7	16.9	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	52.4	27.6	15.2	15.4	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	49.8	25.1	14.8	13.8	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	46.2	25.3	15.9	14.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	44.4	24.9	15.3	14.1	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	43.2	26.5	16.4	15.2	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	46.2	28.0	15.1	16.1	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	44.4	25.4	14.9	17.9	<4.0	0.30	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	43.2	26.4	16.4	15.4	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	47.1	24.8	14.7	13.9	<4.0	0.30	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	48.4	26.2	11.4	16.4	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	49.6	28.4	15.7	16.4	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<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/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³,CO-<0.1 mg/m³

Prepared by: **Verified by:**

Ref: VCSPL/23-24/-TR-05917 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
04.04.2023	50.4	30.4	9.5	18.5	<4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	52.1	29.1	10.8	16.8	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	51.2	30.6	11.4	17.4	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	52.9	31.1	10.7	16.7	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	54.1	30.9	9.6	18.6	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	52.5	29.4	10.4	15.4	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	50.1	30.7	7.4	16.4	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	49.8	31.6	9.3	18.3	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	52.2	29.6	10.4	17.4	<4.0	0.37	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	50.5	30.8	8.6	18.6	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	49.5	28.5	9.8	17.8	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	51.5	29.3	10.5	18.5	<4.0	0.37	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	52.8	31.6	8.7	16.7	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	48.5	27.2	8.9	17.9	<4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	52.7	28.0	9.9	15.9	<4.0	0.42	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	51.4	29.2	8.7	18.7	<4.0	0.44	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	50.9	28.7	10.1	16.5	<4.0	0.42	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	49.1	27.5	8.2	15.6	<4.0	0.43	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	48.5	26.6	6.5	16.5	<4.0	0.41	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	49.8	25.6	10.4	17.4	<4.0	0.39	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	49.5	27.1	7.9	15.9	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	47.7	28.5	9.2	16.2	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	48.2	26.4	6.8	15.8	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	46.5	27.4	7.9	17.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	48.8	26.0	7.5	16.5	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	46.8	25.5	7.9	15.9	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	50.3	28.7	9.1	17.1	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

Prepared by: **Verified by:**

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 Enginering
- 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: VCSPL/23-24/TR-05918 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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**

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
04.04.2023	48.6	29.6	10.8	19.3	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	50.2	27.8	9.6	19.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	49.8	26.7	8.9	18.6	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	48.4	29.4	10.2	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	50.9	28.2	9.5	18.9	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	48.7	30.5	10.4	18.5	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	46.4	28.6	8.1	17.9	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	47.1	27.6	9.5	18.6	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	49.8	26.7	11.4	18.7	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	47.4	28.8	9.7	19.6	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	50.1	30.5	10.5	19.5	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	49.4	29.5	10.1	20.1	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	51.1	28.7	9.8	19.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	50.2	27.6	10.8	18.9	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	52.6	29.5	10.1	19.1	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	51.1	28.8	9.8	19.5	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	50.9	29.5	9.6	18.9	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	47.6	27.4	10.1	19.1	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	48.5	26.5	10.2	19.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	47.1	28.4	9.9	18.9	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	49.9	27.6	10.8	18.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	50.4	25.2	9.8	17.9	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	49.5	26.6	9.1	17.8	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	48.8	27.1	9.3	18.8	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	47.7	26.9	10.1	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	50.2	28.8	8.9	19.9	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	49.3	28.2	9.9	19.0	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

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

Prepared by: **Verified by:**

Ref: VCSPL/23-24/TR-05919 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

Date	PARAMETERS												
	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2023	51.4	29.0	15.5	24.5	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	50.3	26.3	16.3	24.3	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	51.7	30.4	16.9	23.9	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	49.7	29.8	16.7	23.7	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	50.5	28.5	16.4	23.4	5.5	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	48.9	26.3	19.7	26.7	5.3	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	49.3	27.9	18.3	25.3	5.2	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	47.3	25.8	17.6	24.6	5.4	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	48.5	28.4	16.7	23.7	<4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	49.2	27.6	17.5	24.5	5.6	0.39	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	48.4	29.1	15.4	25.4	5.5	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	50.8	28.6	16.5	22.5	5.3	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	49.1	27.1	18.3	20.3	<4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	50.2	28.6	16.4	23.4	<4.0	0.41	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	46.9	25.1	17.5	22.5	5.2	0.43	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	48.1	28.9	19.3	20.6	5.4	0.40	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	50.5	26.4	16.5	23.5	5.5	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	49.7	27.2	19.4	22.4	<4.0	0.30	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	46.9	26.9	17.5	20.8	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	47.4	27.7	18.6	21.6	5.3	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	46.9	26.2	18.9	22.9	5.4	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	45.4	28.6	18.8	20.8	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	47.1	29.4	18.5	22.5	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	48.8	27.0	18.3	19.3	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	46.8	26.4	17.9	20.9	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	45.3	25.5	17.6	18.6	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	0.32	400	05	01	20	1.0	06	--
Average	**48.7**	**27.6**	**17.6**	**22.8**	**5.4**	**0.35**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<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: SO2< 4 µg/m3, NOX< 9 µg/m3,O3<4 µg/m3, Ni<0.01 ng/m3, As< 0.001 ng/m3, C6H6<0.001 µg/m3, BaP<0.002 ng/m3, Pb<0.001 µg/m3, F<0.01µg/m3,CO-<0.1 mg/m³

Prepared by: **Verified by:**

Ref: VCSPL/23-24/TR-05920 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
04.04.2023	51.3	28.6	16.2	21.2	< 4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	50.5	27.6	17.4	24.4	< 4.0	0.37	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	49.4	29.7	16.2	23.2	< 4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	48.5	28.6	15.4	22.4	< 4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	50.3	26.0	17.8	24.8	< 4.0	0.45	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	48.8	28.0	15.7	20.4	< 4.0	0.42	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	49.5	26.1	18.4	20.7	< 4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	49.6	25.9	16.5	21.4	< 4.0	0.39	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	48.4	29.1	23.6	26.5	< 4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	50.4	28.0	20.4	27.2	< 4.0	0.42	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	49.5	27.6	19.7	26.5	< 4.0	0.44	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	48.4	26.4	17.5	29.6	< 4.0	0.45	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	50.1	25.1	16.5	28.4	< 4.0	0.42	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	49.2	28.6	14.5	26.4	< 4.0	0.46	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	48.9	27.1	18.7	25.1	< 4.0	0.49	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	48.1	26.9	16.9	28.2	< 4.0	0.45	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	49.7	28.4	15.7	30.2	<4.0	0.44	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	47.2	29.7	15.1	27.6	<4.0	0.38	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	49.5	29.4	16.4	29.4	< 4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	48.1	25.7	14.9	28.2	< 4.0	0.39	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	47.9	24.2	15.4	27.5	< 4.0	0.37	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	47.4	29.6	16.7	27.4	< 4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	49.5	27.3	12.5	23.5	< 4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	47.8	26.6	14.6	21.6	< 4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	48.7	25.9	17.2	24.2	< 4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	49.2	28.7	16.2	23.2	< 4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**49.1**	**27.5**	**16.8**	**25.4**	**<4.0**	**0.38**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Gaeke method**	**Modified Jacob & Hochheiser (Na-Arsenite)**	**Chemical Method**	**NDIR Spectroscopy**	**Indophenol blue method**	**Absorption & Desorption followed by GC analysis**	**Solvent extraction followed by Gas Chromatography analysis**	**AAS method after sampling**	**AAS method after sampling**	**AAS method after sampling**	**Zirconium SPADNS Method**

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

Prepared by: **Verified by:**

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 Enginering
- 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: VCSPL/23-24/TR-05921 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

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)
04.04.2023	53.5	28.2	16.2	25.2	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	52.3	29.6	17.9	25.9	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	51.5	27.5	18.4	24.4	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	50.2	29.1	16.3	23.3	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	49.2	28.2	17.2	25.2	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	51.8	26.6	18.5	26.5	<4.0	0.33	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	52.7	25.4	17.8	22.8	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	50.7	27.2	16.9	24.9	<4.0	0.34	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	51.5	28.2	15.7	25.7	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	52.3	26.4	18.5	25.5	<4.0	0.35	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	51.6	28.2	16.9	24.9	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	49.5	27.1	17.6	24.6	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	46.8	26.6	16.9	23.9	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	48.5	29.1	16.5	23.5	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	50.6	30.2	16.3	23.3	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	51.4	27.6	18.9	25.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	52.8	28.3	19.5	26.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	47.6	25.4	18.1	24.1	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	48.2	27.7	18.7	25.7	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	49.8	29.3	18.5	25.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	48.6	28.4	17.9	24.9	<4.0	0.36	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	46.4	26.4	17.6	24.6	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	49.6	29.2	16.9	23.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	48.2	28.7	16.5	23.5	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	50.8	27.6	16.3	23.3	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	48.5	29.8	17.1	25.1	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	**50.2**	**27.9**	**17.4**	**24.7**	**<4.0**	**0.31**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Gaeke method**	**Modified Jacob & Hochheiser (Na-Arsenite)**	**Chemical Method**	**NDIR Spectroscopy**	**Indophenol blue method**	**Absorption & Desorption followed by GC analysis**	**Solvent extraction followed by Gas Chromatography analysis**	**AAS method after sampling**	**AAS method after sampling**	**AAS method after sampling**	**Zirconium SPADNS Method**

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

Prepared by: **Verified by:**

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Ref: VCSPL/23-24/TR-05922 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

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

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)
04.04.2023	52.4	30.6	11.8	19.3	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	50.2	29.8	10.1	19.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	54.8	28.7	12.9	18.6	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	51.4	29.4	13.1	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	53.9	29.2	10.2	18.9	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	52.7	30.5	12.4	18.5	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	51.4	28.6	11.1	17.9	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	50.1	29.6	10.5	18.6	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	52.8	30.7	12.4	18.7	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	50.4	28.8	11.7	19.6	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	49.1	27.5	10.9	19.5	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	51.4	28.5	11.9	20.1	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	52.1	29.7	12.5	19.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	48.2	30.6	13.3	18.9	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	51.9	27.5	10.1	19.1	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	52.1	28.8	12.5	19.5	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	50.5	27.4	11.2	20.1	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	47.6	25.1	10.4	18.7	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	49.5	29.5	10.9	19.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	50.1	27.9	12.4	18.9	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	50.1	29.6	10.8	18.9	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	48.9	28.2	11.9	17.9	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	47.5	27.6	12.1	17.8	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	49.8	28.1	10.8	18.8	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	50.1	29.9	11.5	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	49.2	28.8	12.1	19.9	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	**50.7**	**28.9**	**11.6**	**19.1**	**<4.0**	**0.25**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<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/m³, NO_X< 9 µg/m³,O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³·CO-<0.1 mg/m³

Prepared by: **Verified by:**

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

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- Waste Management Services

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

Ref: VCSPL/23-24/TR-05923 **Date: 03.07.2023**

AMBIENT AIR QUALITY MONITORING REPORT (APRIL-23 TO JUNE-23)

1. **Name of Industry** : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. **Sampling Location** : **Monitoring Station No.- AAQMS-8 : Thelkoloi**
3. **Monitoring Instruments** : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. **Sample collected by** : VCSPL 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)
04.04.2023	58.2	32.7	14.8	26.3	8.2	0.33	24.6	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2023	53.5	32.6	15.1	28.8	6.4	0.35	21.6	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2023	56.8	30.3	15.9	25.6	7.7	0.36	22.4	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2023	55.9	29.5	16.1	28.2	9.2	0.39	25.5	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2023	52.5	28.5	16.2	26.9	8.5	0.35	24.6	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2023	50.7	29.4	17.4	27.5	7.5	0.34	20.2	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2023	52.4	31.7	17.1	29.9	8.8	0.36	22.3	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2023	50.8	26.7	17.5	28.6	9.3	0.38	25.4	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2023	53.4	28.0	18.4	19.7	10.2	0.39	25.9	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2023	55.7	29.0	18.7	22.6	7.5	0.31	21.4	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2023	52.2	30.1	18.9	26.5	9.6	0.35	25.9	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2023	50.8	32.6	17.9	24.1	8.4	0.31	22.5	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2023	53.1	29.1	18.5	30.8	6.5	0.39	20.2	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2023	55.2	31.6	17.3	28.9	9.3	0.33	26.1	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2023	52.9	30.1	17.1	25.1	10.5	0.42	28.9	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2023	54.4	28.7	16.5	29.5	11.5	0.37	22.6	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2023	55.8	29.6	17.2	28.4	<4.0	0.39	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2023	51.2	27.1	15.5	26.3	<4.0	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2023	50.6	29.4	15.9	29.4	8.3	0.36	24.9	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2023	51.4	27.7	16.4	30.9	6.6	0.34	20.1	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2023	52.9	28.2	15.8	22.9	8.8	0.31	22.8	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2023	53.4	30.6	16.9	27.9	9.7	0.33	24.5	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2023	54.4	29.4	17.1	29.8	8.2	0.35	25.9	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2023	50.8	32.0	16.8	28.8	7.4	0.36	21.3	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2023	51.8	28.4	17.5	26.2	6.3	0.32	23.9	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2023	52.4	26.5	18.1	28.9	7.6	0.30	22.8	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	53.2	29.6	16.9	27.3	8.4	0.35	23.6	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indophenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 µg/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:**

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Visit us at: www.vcspl.org

Ref: VCSPL/23-24/TR-05933 **Date: 03.07.2023**

SURFACE WATER QUALITY ANALYSIS REPORT JUNE-2023

Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
Sampling location : **SW-1:** Hirakud Reservoir; **SW-2:** Lapanga Pond**; SW-3:** Matwadinadi –U/S**, SW-4:**Bamloi Pond; **SW-5:** Bhedan River Near Katikela
Date of sampling : **15.06.2023**
Date of analysis : **16.06.2023 TO 22.06.2023**
Sample collected by : VCSPL 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 25^0C	APHA 4500H^+ B	--	6.0-9.0	7.37	7.26	7.81	7.77	7.85
2	Colour	APHA 2120 B, C	Hazen	300	<1.0	<1.0	<1.0	<1.0	<1.0
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	--	3.4	5.1	2.3	5.6	2.2
6	Total Dissolved Solids	APHA 2540 C	mg/l	1500	114	138	102	145	110
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	66	82	72	93	68
8	Total Alkalinity	APHA 2320 B	mg/l	--	56	78	62	70	66
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	19.2	22.5	20.1	22.6	18.8
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	4.39	6.27	5.30	8.89	5.12
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	BDL	BDL	BDL	BDL	BDL
12	Boron (as B)	APHA 4500B, B	mg/l	--	<0.1	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	600	30	32	28	34	36
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	20.6	35.4	18.6	44.2	19.7
15	Fluoride (as F)	APHA 4500F^- C	mg/l	1.5	0.34	0.25	0.29	0.32	0.33
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	1.45	1.61	1.31	1.55	1.34
17	Sodium as Na	APHA3500-Na	mg/l	--	8.4	9.2	9.9	9.0	8.7
18	Potassium as K	APHA 3500-K	mg/l	--	2.1	2.5	2.4	2.2	2.4
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
20	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	BDL	BDL	BDL	BDL	BDL
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1.0	<0.2	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.004	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.02	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.03	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.054	0.15	0.048	0.14	0.059
28	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
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	<0.01	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.1	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.004	<0.004	<0.004	<0.004	<0.004
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	240	280	340	260	280

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

Prepared by: **Verified by:**

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

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Ref: VCSPL/23-24/TR-05934 **Date:03.07.2023**

SURFACE WATER QUALITY ANALYSIS REPORT JUNE-20223

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-6:** Bhedan River Near Khinda Village;**SW-7**:Matwadinadi-D/S; **SW-8:** Hirakud Reservoir Near Gurupali village; **SW-9:** Salepali village Pond; **SW-10:** Sanamal village Pond
3. Date of sampling : **15.06.2023**
4. Date of analysis : **16.06.2023 TO 22.06.2023**
5. Sample collected by : VCSPL 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^{0}C	APHA 4500H^+ B	--	6.0-9.0	7.42	7.74	7.39	7.45	7.31
2	Colour	APHA 2120 B, C	Hazen	300	<1.0	<1.0	<1.0	<1.0	<1.0
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	--	4.6	3.2	3.1	5.5	5.4
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	113	98	121	112	141
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	78	69	102	87	94
9	Total Alkalinity	APHA 2320 B	mg/l	--	62	70	66	72	81
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	21.6	20.4	26.2	24.8	26.1
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	5.85	4.39	8.89	6.09	7.01
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	BDL	BDL	BDL	BDL	BDL
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	30	24	31	49	51
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	18.2	15.6	18.4	28.1	25.0
16	Fluoride (as F)	APHA 4500F^- C	mg/l	1.5	0.37	0.32	0.44	0.40	0.39
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	2.86	2.34	2.48	3.09	3.31
18	Sodium as Na	APHA 3500-K	mg/l	--	10.1	8.7	9.2	9.9	7.8
19	Potassium as K	APHA3500-Na	mg/l	--	3.6	2.7	2.5	3.1	3.4
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
21	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	BDL	BDL	BDL	BDL	BDL
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	<0.01	<0.01	<0.01	<0.01	<0.01
24	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.004	<0.004	<0.004	<0.004	<0.004
25	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.02	<0.02	<0.02	<0.02	<0.02
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.03	<0.03	<0.03	<0.03	<0.03
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.045	0.064	0.060	0.049	0.052
29	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
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	<0.01	<0.01	<0.01	<0.01	<0.01
32	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.1	<0.1	<0.1	<0.1	<0.1
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.004	<0.004	<0.004	<0.004	<0.004
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 Coliform	APHA9221-B	MPN/ 100 ml	5000	260	320	280	310	340

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

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

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

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Mineral Lab
&
Microbiology Lab

Ref: VCSPL/23-24/TR-05927 **Date: 03.07.2023**

GROUND WATER QUALITY ANALYSIS REPORT JUNE-2023

1. Name of Industry : **M/s Hindalco 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 : **15.06.2023**
4. Date of analysis : **16.06.2023 TO 22.06.2023**
5. Sample collected by : VCSPL 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 at 25^{0}C	APHA 4500H$^+$ B	--	6.5-8.5	No Relaxation	7.46	7.39	7.40	7.52
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	172	170	152	170
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	96	112	86	106
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	86	88	90	86
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	26.6	29.3	25.2	27.2
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	6.95	8.22	7.26.	8.20
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	BDL	BDL	BDL	BDL
12	Boron (as B)	APHA 4500B, B	mg/l	2.4	No Relaxation	<0.1	<0.1	<0.1	<0.1
13	Chloride (as Cl)	APHA 4500Cl$^-$ B	mg/l	250	1000	27.8	30.2	26.9	28.4
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	4.4	4.8	4.2	4.6
15	Fluoride (as F)	APHA 4500F$^-$ C	mg/l	1.0	1.5	0.37	0.29	0.28	0.33
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	No Relaxation	2.8	3.2	3.4	3.0
17	Sodium as Na	APHA3500-Na	mg/l	--	--	15.2	14.2	14.4	15.2
18	Potassium as K	APHA 3500-K	mg/l	--	--	3.2	3.6	3.7	4.3
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	<0.01	<0.01	<0.01	<0.01
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	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No Relaxation	0.14	0.16	0.18	0.15
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	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.004	<0.004	<0.004	<0.004
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	mg/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, AL: Agreeable, ND: Not Detected.

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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Ref: VCSPL/23-24/TR-05928 **Date: 03.07.2023**

GROUND WATER QUALITY ANALYSIS REPORT JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-5:** Thelkoloi Village **,GW-6:** Ghichamura Village , **GW-7:** Gumkarma Village, **GW-8:** Chalatikra Village
3. Date of sampling : **15.06.2023**
4. Date of analysis : **16.06.2023 TO 22.06.2023**
5. Sample collected by : VCSPL 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 at 25^{0}C	APHA 4500H^+ B	--	6.5-8.5	No Relaxation	7.36	7.40	7.28	7.34
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	APHA2510-B	µs/cm	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	165	208	170	222
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	88	118	92	120
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	92	100	98	96
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	27.6	31.5	28.7	35.3
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	6.10	7.42	6.02	8.2
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	BDL	BDL	BDL	BDL
12	Boron (as B)	APHA 4500B, B	mg/l	2.4	No Relaxation	<0.1	<0.1	<0.1	<0.1
13	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	250	1000	26.2	29.4	24.1	30.2
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	5.5	5.1	4.9	5.5
15	Fluoride (as F)	APHA 4500F^- C	mg/l	1.0	1.5	0.34	0.30	0.26	0.31
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	No Relaxation	2.5	3.0	2.3	3.3
17	Sodium as Na	APHA3500-Na	mg/l	--	--	14.4	13.5	14.2	13.8
18	Potassium as K	APHA 3500-K	mg/l	--	--	3.8	6.6	5.4	4.2
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	<0.01	<0.01	<0.01	<0.01
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	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No Relaxation	0.15	0.21	0.17	0.19
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	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.004	<0.004	<0.004	<0.004
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	mg/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, AL: Agreeable, ND: Not Detected.

Prepared By **Verrified By**

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Ref: VCSPL/23-24/R-07868 **Date: 27.09.2023**

GROUND WATER LEVEL MONITORING REPORT SEPTMEBER-2023

1. Name of Industry	:	**M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location	:	**GW-1:**Near Ash Pond, **GW-2:**Near Proposed Pond, **GW-3:**Near RR Colony, **GW-4:** Bomaloi Village
3. Date of Sampling	:	**18.09.2023**
4. Monitoring By	:	VCSPL Representative

SL No.	Date of Sampling	Name of Location	Unit	Water Level
01	18.09.2023	GW1	Mbgl	2.37
02	18.09.2023	GW2	Mbgl	2.45
03	18.09.2023	GW3	Mbgl	3.60
04	18.09.2023	GW4	Mbgl	5.20

Prepared By: **Verified By:**

Ref: VCSPL/23-24/R-07869 **Date: 27.09.2023**

GROUND WATER QUALITY (Heavy Metals) ANALYSIS REPORT SEPT-2023

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	:	18.09.2023
4. Date of Analysis		19.09.2023 TO 25.09.2023
5. Monitoring By	:	VCSPL Representative

SL No.	Parameters	Test Method	Unit	Standard	Result
01	Mercury as Hg	APHA 3112 B	Mg/l	0.001	<0.001
02	Arsenic as As	APHA 3112 B	Mg/l	0.01	<0.005
03	Lead as Pb	APHA 3112 B	Mg/l	0.01	<0.005
04	Chromium as Cr	APHA 3112 B	Mg/l	0.05	<0.01

Prepared By:

Verified By:

Ref: VCSPL/23-24/R-07870 **Date: 27.09.2023**

GROUND WATER QUALITY ANALYSIS REPORT SEPT-2023

1. Name of Industry	:	M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur
2. Sampling Location	:	GW-1:Near Ash Pond, GW-2:Near Proposed Pond, GW-3:Near RR Colony, GW-4: Ash Pond Area Bore well
3. Date of Sampling	:	18.09.2023
4. Date of Analysis	:	19.09.2023 TO 25.09.2023
5. Sample Collected By	:	VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results			
				Acceptable Limit	Permissible Limit	GW-1	GW-2	GW-3	GW-4
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.35	7.48	7.26	7.31
2.	Turbidity	APHA 2130B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	126	104	132	128
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	1.0	No Relaxation	0.22	0.18	0.23	0.20
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	28	34	26	24
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	196	148	191	162
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	31.6	35.9	44.2	32.4
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	11.44	3.49	5.26	11.44
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001	<0.001	<0.001	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	16.8	18.2	17.1	17.5
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	5.1	4.9	5.5	5.0
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005	<0.005	<0.005	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	11.4	10.9	12.1	13.7
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.76	0.62	0.69	0.55
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1.0	1.5	1.12	0.95	1.03	0.87
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001	<0.001	<0.001	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001	<0.001	<0.001	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	ND	ND	ND	ND
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005	<0.005	<0.005	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005	<0.005	<0.005	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	102.0	94.0	113.0	92.0
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001	<0.001	<0.001	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	2.4	No Relaxation	<0.001	<0.001	<0.001	<0.001

Note : ND: Not Detected ,BDL :Below Detection Limit

Prepared By: **Verified By:**

Ref: VCSPL/23-24/TR-05936 **Date: 03.07.2023**

SOIL QUALITY ANALYSIS REPORT JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : **12.06.2023**
3. Sampling Location : **S-1:** Project Site; **S-2:** Thelkoloi; **S-3:** Ghichamura; **S-4:** Lapanga; **S-5:** Bamloi
4. Date of Analysis : **13.06.2023 TO 19.06.2023**
5. Sample Collected By : VCSPL representative

Sl. No.	Parameters	Unit	S-1	S-2	S-3	S-4	S-5
1	P^H at 25^0C	--	7.20	7.09	7.38	7.23	7.39
2	Conductivity	--	142	135	129	158	137
3	Soil Texture	--	Sandy Loamy	Clay Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy
4	Sand	%	53.4	26.5	23.6	48.8	51.2
5	Silt	%	15.1	23.9	25.1	20.9	22.7
6	Clay	%	33.4	53.4	46.9	30.1	28.7
7	Bulk Density	gm/cc	1.75	1.39	1.66	1.51	1.60
8	Exchangeable Calcium as Ca	%	32.4	33.9	36.4	33.8	42.2
9	Exchangeable Magnesium as Mg	%	52.6	57.4	51.2	55.6	58.1
10	Available Sodium as Na	%	0.024	0.032	0.027	0.039	0.035
11	Available Potassium as K	%	0.056	0.062	0.055	0.052	0.052
12	Available phosphorous as P	%	0.030	0.028	0.026	0.024	0.034
13	Available Nitrogen as N	%	0.33	0.29	0.30	0.34	0.31
14	Organic Matter	%	4.1	6.0	4.8	4.8	4.6
15	Organic Carbon as OC	%	1.79	1.52	1.63	1.62	1.70
16	Water soluble Chlorides as Cl	%	0.32	0.36	0.30	0.28	0.34
17	Water soluble Sulphates as SO_4	%	0.20	0.20	0.26	0.22	0.21
18	Sodium Absorption Ratio	%	0.00016	0.00015	0.00017	0.00016	0.00021
19	Aluminium as Al	%	0.072	0.054	0.048	0.072	0.066
20	Total Iron as Fe	%	0.0027	0.0024	0.0026	0.0032	0.0024
21	Manganese as Mn	%	0.00021	0.00024	0.00028	0.00026	0.00024
22	Boron as B	%	0.00034	0.00030	0.00028	0.00032	0.00032
23	Zinc as Zn	%	6.1	5.4	7.2	6.3	6.9
24	Silica as SiO_2	%	0.048	0.054	0.052	0.050	0.046
25	Ferric Oxide as Fe_2O_3	%	33.4	33.1	32.4	32.2	33.6
26	Calcium Oxide as CaO	%	25.2	26.7	23.6	27.4	24.2
27	Magnesium Oxide as MgO	%	0.00014	0.00013	0.00017	0.00021	0.00020
28	Aluminium Oxide as Al_2O_3	%	0.040	0.026	0.052	0.032	0.032
29	Iron Oxide as FeO	%	0.0050	0.0026	0.0020	0.0027	0.0038
30	Manganese Oxide as MnO	%	0.0492	0.0471	0.0456	0.0528	0.0511
31	Potassium Oxide as K_2O	%	0.0080	0.0079	0.0076	0.0070	0.0082
32	Phosphorus Oxide as P_2O_5	%	0.00059	0.00038	0.00030	0.00046	0.00055
33	Fluoride as F	%	6.21	6.78	6.84	7.19	7.28

ND: Not Detected.

Prepared by: **Verified by:**

Ref: VCSPL/23-24/TR-05937 **Date: 03.07.2023**

SOIL QUALITY ANALYSIS REPORT JUNE-2023

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : **12.06.2023**
3. Sampling Location : **S-6:** Tileimal; **S-7:** Jangala; **S-8:** Gurupali; **S-9**: Gumkarama; **S-10:** Bhadarpali.
4. Date of Analysis : **13.06.2023 TO 19.06.2023**
5. Sample Collected By : VCSPL representative

Sl. No.	Parameters	Unit	S-6	S-7	S-8	S-9	S-10
1	P^H at 25^0C	--	7.28	7.31	6.92	7.41	7.26
2	Conductivity	--	154	131	162	136	132
3	Soil Texture	--	Clay Loamy	Sandy Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy
4	Sand	%	24.2	48.2	46.4	51.1	26.6
5	Silt	%	20.1	19.6	22.1	19.4	20.4
6	Clay	%	63.2	37.4	39.5	34.8	51.4
7	Bulk Density	gm/cc	1.62	1.59	1.42	1.52	1.77
8	Exchangeable Calcium as Ca	%	44.6	42.1	43.9	45.4	42.8
9	Exchangeable Magnesium as Mg	%	52.3	54.8	55.2	66.7	57.2
10	Available Sodium as Na	%	0.026	0.032	0.035	0.030	0.031
11	Available Potassium as K	%	0.051	0.056	0.057	0.049	0.052
12	Available phosphorous as P	%	0.026	0.028	0.025	0.028	0.033
13	Available Nitrogen as N	%	0.31	0.35	0.34	0.26	0.24
14	Organic Matter	%	4.1	3.6	4.5	4.3	3.7
15	Organic Carbon as OC	%	1.55	1.78	1.68	1.70	1.32
16	Water soluble Chlorides as Cl	%	0.36	0.32	0.35	0.42	0.44
17	Water soluble Sulphates as SO_4	%	0.24	0.26	0.26	0.24	0.23
18	Sodium Absorption Ratio	%	0.00018	0.00015	0.00021	0.00022	0.00016
19	Aluminium as Al	%	0.058	0.052	0.063	0.056	0.054
20	Total Iron as Fe	%	0.0023	0.0030	0.0027	0.0024	0.0030
21	Manganese as Mn	%	0.00021	0.00022	0.00027	0.00032	0.00024
22	Boron as B	%	0.00026	0.00027	0.00025	0.00022	0.00030
23	Zinc as Zn	%	6.6	7.1	6.0	7.4	6.6
24	Silica as SiO_2	%	0.030	0.036	0.033	0.042	0.040
25	Ferric Oxide as Fe_2O_3	%	31.4	32.6	34.1	32.9	33.2
26	Calcium Oxide as CaO	%	22.6	27.8	28.7	23.2	24.4
27	Magnesium Oxide as MgO	%	0.00040	0.00035	0.00026	0.00025	0.00026
28	Aluminium Oxide as Al_2O_3	%	0.0179	0.0180	0.0184	0.0203	0.0194
29	Iron Oxide as FeO	%	0.0021	0.0024	0.0026	0.0022	0.0024
30	Manganese Oxide as MnO	%	0.0408	0.0431	0.0502	0.0394	0.0467
31	Potassium Oxide as K_2O	%	0.0081	0.0095	0.0093	0.0087	0.0082
32	Phosphorus Oxide as P_2O_5	%	0.00044	0.00036	0.00028	0.00032	0.00023
33	Fluoride as F	%	7.36	6.97	7.15	6.68	7.11

Prepared by: VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Verified by: VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Ref: VCSPL/3-24/TR-05924 **Date: 03.07.2023**

NOISE MONITORING REPORT JUNE-2023

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

Daytime Noise monitoring results (Noise Level in dB (A) JUNE-2023

TIME (6.00AM to 9.00PM)	N1:Gumkarma (06.06.2023)	N2:Ghichamura (06.06.2023)	N3:Bomaloi (13.06.2023)	N4:Tileimal (13.06.2023)	N5:Thelkoli (20.06.2023)	N6:Khadiapali (20.06.2023)	N7:Kapilas (27.06.2023)	N8:Phulchanghal (27.06.2023)
06.00am	49.2	50.8	45.9	46.5	49.6	52.6	46.4	45.6
07.00am	47.6	51.1	49.9	48.7	50.1	53.4	47.2	47.1
08.00am	50.5	50.9	50.5	49.2	53.2	54.7	48.9	48.2
09.00am	51.3	52.4	53.6	48.6	54.1	53.5	50.4	47.9
10.00am	52.9	53.6	54.1	47.9	51.6	54.8	46.5	49.5
11.00am	50.4	54.2	54.2	49.8	53.2	52.6	48.7	50.1
12.00 noon	49.6	52.6	50.2	47.5	52.4	53.1	49.5	47.9
01.00pm	48.7	52.3	52.3	48.9	51.7	54.6	47.8	50.3
02.00pm	52.3	53.1	53.9	50.1	54.2	53.2	50.1	49.5
03.00pm	49.2	54.2	52.4	46.9	55.9	51.4	48.6	51.2
04.00pm	50.8	53.9	54.9	47.8	51.7	50.6	49.7	52.6
05.00pm	52.4	54.1	53.8	50.5	53.2	52.9	49.5	54.7
06.00pm	51.6	52.6	52.7	51.3	54.6	54.1	47.5	52.9
07.00pm	52.6	53.2	52.6	52.6	52.9	53.2	48.6	53.4
08.00pm	53.2	54.6	54.5	54.2	53.7	52.6	46.5	54.1
09.00pm	53.1	52.1	54.9	52.9	54.6	53.1	47.2	53.6
Average	51.0	52.9	52.5	49.6	52.9	53.2	48.3	50.5
Standard as per CPCB	55							

Night time Noise monitoring results (Noise Level in dB (A) JUNE-2023

TIME (10.00PM to 5.00AM)	N1:Gumkarma (06.06.2023)	N2:Ghichamura (06.06.2023)	N3:Bomaloi (13.06.2023)	N4:Tileimal (13.06.2023)	N5:Thelkoli (20.06.2023)	N6:Khadiapali (20.06.2023)	N7:Kapilas (27.06.2023)	N8:Phulchanghal (27.06.2023)
10.00pm	44.9	43.2	44.1	43.7	44.1	44.7	39.8	42.9
11.00pm	44.7	42.1	43.9	44.6	42.9	43.6	38.6	44.5
12.00 Midnight	43.2	41.6	43.7	43.5	43.4	43.8	39.9	43.7
01.00am	41.5	40.8	43.5	42.9	42.9	42.9	38.7	42.6
02.00am	42.6	41.3	42.6	43.1	43.1	43.1	37.6	42.1
03.00am	41.8	40.8	42.1	42.7	43.5	44.7	40.1	41.7
04.00am	43.7	41.4	44.7	44.6	42.6	43.6	38.6	43.5
05.00am	44.9	42.6	43.9	44.1	44.4	44.9	39.8	43.9
Average	43.4	41.7	43.6	43.7	43.4	43.9	39.1	43.1
Standard as per CPCB	45							

Prepared By: **Verified By:**

Ref: Envlab/23-24/TR-03570 **Date: 23.06.2023**

FORAGE FLUORIDE ANALYSIS REPORT MAY-2023

1	**Name of Industry**	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	**Date of Sampling**	:	**15.05.2023 to 16.05.2023**
3	**Date of Analysis**	:	**17.05.2023 to 20.05.2023**
4	**Name of the Sample**	:	**Vegetation Sample**
5	**Sample Collected By**	:	**VCSPL Representative**

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
15.05.2023	Bomaloi	Bela Tree, Rice Plant	***Aegle marmelo, Oryza Sativa***	AOAC 975.04	**1.5**
15.05.2023	Gurupali	Duba Ghasa, Neem Tree	***Cynodon dactylo, Azadirachta Indica***	AOAC 975.04	**1.6**
15.05.2023	Plant Site	Sisu Tree, Duba Ghasa	***Dalbergia sissoo, Cynodon dactylon***	AOAC 975.04	**2.4**
15.05.2023	Thelkoloi	Bamboo Tree, Rice Plant	***Pongame oil tree, Cynodon dactylon***	AOAC 975.04	**1.7**
15.05.2023	Gumukarma	Bamboo Tree, Rice Plant	***Bambusoideae, Oryza Sativa***	AOAC 975.04	**2.1**
16.05.2023	Ghichamura	Baulakoli Tree, Rice Plant	***Mimusops elengi, Oryza Sativa***	AOAC 975.04	**1.6**
16.05.2023	Tileimal	Rice Plant, Duba Ghasa	***Oryza Sativa, Cynodon dactylon***	AOAC 975.04	**1.3**
16.05.2023	Lapanga	Neem tree, Rice Plant	***Azadirachta indica, Oryza Sativa***	AOAC 975.04	**2.1**
16.05.2023	Jangala	Duba Ghasa, Rice Plant	***Cynodon dactylon, Oryza Sativa***	AOAC 975.04	**1.3**
16.05.2023	Bhadrapali	Karanj Tree, Duba Grass, Rice Plant	***Pongame oil tree, Cynodon dactylon, Oryza Sativa***	AOAC 975.04	**1.2**

Prepared by: VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD. **Verified by:**

Ref: Envlab/23-24/TR-07871 **Date: 04.09.2023**

FORAGE FLUORIDE ANALYSIS REPORT AUGUST-2023

1	**Name of Industry**	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	**Date of Sampling**	:	**07.08.2023 TO 08.08.2023**
3	**Date of Analysis**	:	**09.08.2023 TO 10.08.2023**
4	**Name of the Sample**	:	**Vegetation Sample**
5	**Sample Collected By**	:	**VCSPL Representative**

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
07.8.2023	Bomaloi	Bela Tree, Rice Plant	***Aegle marmelo, Oryza Sativa***	AOAC 975.04	**1.7**
07.8.2023	Gurupali	Duba Ghasa, Neem Tree	***Cynodon dactylo, Azadirachta Indica***	AOAC 975.04	**1.4**
07.8.2023	Plant Site	Sisu Tree, Duba Ghasa	***Dalbergia sissoo, Cynodon dactylon***	AOAC 975.04	**2.1**
07.8.2023	Thelkoloi	Bamboo Tree, Rice Plant	***Pongame oil tree, Cynodon dactylon***	AOAC 975.04	**1.5**
07.8.2023	Gumukarma	Bamboo Tree, Rice Plant	***Bambusoideae, Oryza Sativa***	AOAC 975.04	**1.9**
08.09.2023	Ghichamura	Baulakoli Tree, Rice Plant	***Mimusops elengi, Oryza Sativa***	AOAC 975.04	**1.4**
08.09.2023	Tileimal	Rice Plant, Duba Ghasa	***Oryza Sativa, Cynodon dactylon***	AOAC 975.04	**1.2**
08.09.2023	Lapanga	Neem tree, Rice Plant	***Azadirachta indica, Oryza Sativa***	AOAC 975.04	**1.8**
08.09.2023	Jangala	Duba Ghasa, Rice Plant	***Cynodon dactylon, Oryza Sativa***	AOAC 975.04	**1.2**
08.09.2023	Bhadrapali	Karanj Tree, Duba Grass, Rice Plant	***Pongame oil tree, Cynodon dactylon, Oryza Sativa***	AOAC 975.04	**1.4**

Prepared by: **Verified by:**

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

Glimpses of Sensitization & Awareness of ban on Single Use Plastic Inside Plant, Township and Nearby Villages

SUP Ban Awareness in Benjipali & Phulchanger village

SUP Ban Awareness in Bomaloi & Naikpada village

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

SUP Ban Awareness to Workmen inside Plant & Township

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

SUP Ban Awareness to Workmen inside Plant & Township

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

SUP Ban Awareness to Workmen inside Plant & Township

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

SUP Ban Awareness to Workmen inside Plant & Township

Reference: - MoEF&CC Office memorandum F. No. IA3-22/8/2021-1A.III [150512] dated 18/07/2022

ADITYA BIRLA
HINDALCO

Date: 25.07.2022

OFFICE ORDER

Subject: Discontinuation of Single Use Plastic ("SUP") items.

Dear Colleague,

As we all know, plastic items are not good for sustainable environment. We are hereby making a conscious effort in accordance with the Plastic Waste Amendment Rule, 2021 to refuse/ reduce the consumption of plastic items, including packaging but wherever unavoidable will be separately binned (whenever rejected), collected and send it to disposal for its proper recycling.

We are regularly creating awareness campaigns for all our employees, family members, vendors and stakeholders to reduce the generation of plastic waste. For safer, healthier and inclusive plant and township for all we hereby prohibit the following plastic items inside the plant and all public building of Aditya Aluminium effective immediately.

1. Thermocol/ Plastic items like plates, cups, glasses, cutlery such as forks, spoons, knives, straws, etc.
2. Barricading strips
3. Plastic Folders
4. Plastic sample bags
5. Mineral Water Bottles
6. Single use plastic bottles for drinking purposes
7. Plastic used for packing of motors/ value
8. Gift wrapping plastic films
9. Plastic carry bag
10. Plastic or PVC banners (Flex Banners)

Special instructions shall be given to vendors while procuring items to substitute single use plastic packaging with sustainable options. All are requested to cooperate and use alternate biodegradable substitutes.

Thanking You

Yours faithfully

Dr. Vivekanand Mishra

Vice President and HR Head

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Corporate ID No.: L27020MH1958PLC011238

Communication to Employee, Workmen and Contactors