

HIL/LHD/ENV/MoEF/67

Date: 24.05.2021

To,
The Additional Principal Chief Conservator of Forest (C)
Ministry of Environment, Forests and Climate Changes
Regional Office (ECZ), Ranchi-834002.

Sub: Compliance Report of EC conditions for Amtipani Bauxite Mining project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period October'20 to March'21.

Ref: Environmental Clearance letter no J-11015/241/2005-IA II (M) dated 14th August 2006

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Amtipani** Bauxite mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period October'20 to March'21.


The lease detail is as below.

| Lease area (ha) | Production Capacity (MT) | Lease Period |
|-----------------|--------------------------|--------------------------|
| 190.95 | 150000 | 13.03.2006 to 12.03.2056 |

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED


(Basudev Gangopadhyay)
GM (Geology & Environment)

Enclosure: - As Above

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Name of the Project : Amtipani Bauxite Mine (190.95 ha)
M/s Hindalco Industries Ltd

Environment Clearance No & date : J - 11015/241/2005-IA.II (M), dated 14.08.2006

Period of compliance Report : From 1st October 2020 to 31st March 2021

| S No | Conditions | Compliance Status |
|----------------------------|---|--|
| Specific Conditions | | |
| 1 | All the conditions stipulated by the State Pollution Control Board in their NOC should be effectively implemented. | Implementations of stipulated conditions in NOC are full filled post which consent to operate has been granted by SPCB from time to time. The existing consent to operate is valid up to 31.12.2025. Productions of bauxite are within limits specified in Consent to Operate. |
| 2 | The mining operations shall not intersect groundwater table. Prior approval of the MoEF and CGWA shall be obtained for mining below water table. | The mining operation confined within shallow depth (20 m max) and not intersected ground water. In future also, working zone will be restricted to above ground water table. We undertake that no mining is/was carried out below ground water table and the same status will be maintain in future also. |
| 3 | The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use. | Land acquisition is being done with permission of competent authority of State Government i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement is being done with raiyat (Land Owner) for about 20 years with permission of State Govt with provision of returning the land as per the norms set by D.C. The compensation and facilities are being provided as per norms set in agreement. Thus, land acquisition has the approval of State Government. |
| 4 | Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas. | Top soil is being stacked temporarily, if applicable and separately with proper slope & is being used for reclamation and rehabilitation simultaneously with mining |

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| | | operation. |
| 5 | The waste generated in the initial period shall be dumped temporarily and backfilled in the mined out area. There shall be no permanent external OB dump in the project area. Concurrent backfilling should start from the fifth year onwards. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on six monthly basis. | <p>During mining concurrent backfilling of waste in worked out quarry is in practice.</p> <p>We are reviewing progress on continuous basis. Monitoring and management of rehabilitation is continuous through supervision. All three existing dumps have been exhausted by backfilling in the mine voids in a systematic and scientific manner.</p> <p>Compliance status is being submitted to the Ministry of Environment & Forests & Climate Change on six monthly basis.</p> |
| 6 | Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil and mineral dump. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals. | <p>No run-off is generated from mining activities. However, to collect & manage rainwater during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary.</p> <p>Catch drains, Garland drains of appropriate size have been constructed both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies.</p> <p>Sump of adequate capacity is being provided and maintained as required.</p> |
| 7 | Plantation shall be raised in an area of 79.3 ha including a green belt of adequate width by planting the native species around the ML area, roads, etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1500 plants per ha. | <p>Progressive plantation is under progress.</p> <p>During FY 2020-21 total 3750 nos. trees have been planted. Total 13.540 ha areas has been planted till date. In addition to this agricultural activity is going on reclaimed land.</p> <p>Green belt development programme is in progress with progress of mining activities.</p> |


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| 8 | The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board. | <p>Suitable conservation measures to augment ground water have been taken as directed in CGWB NOC Viz. Constructing water harvesting pond, garland drain etc. Catchment areas are being enhanced for accumulation of surface water in the harvested pond. Catchment drains are also being made and are being repaired time to time.</p> <p>We are not using any ground water for mining activities.</p> |
| 9 | Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board. | <p>The mining operation is not intersecting ground water table.</p> <p>We are not using ground water for any mining purpose.</p> <p>Piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as Annexure 1.</p> |
| 10 | Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies. | Rainwater harvested during rainy season is being used for sprinkling on haul roads, mining activities and raising plantation. We are using water harvested by us and not stream water/surface water bodies for mining purposes. |
| 11 | The project proponent shall monitor the spring discharge on long term basis (at least one major spring) both in terms of quantity and quality of water and records maintained. Six monthly report should be submitted to the Ministry of Environment and Forests and its Regional Office located at Bhubneshwar. | Spring is being monitored; report is attached as Annexure 1. |
| 12 | Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded. | Regular maintenance of vehicles is being done to minimize vehicular emission. All measures are being taken to control vehicular emission. The vehicles are being covered with tarpaulin while transportation of mineral. |
| 13 | Drills should either be operated with dust extractors or should be equipped with water injection system | Wet drilling is in practice. |
| 14 | Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of | Blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. All efforts |

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| | ground vibrations and to arrest fly rocks and boulders should be implemented | such as use of Nonel and delay, reduction in charge per delay etc. are being taken to mitigate impact of blasting. |
| 15 | Consent to operate should be obtained from SPCB prior to start of production of mine | Consent to operate has been obtained prior to start of production. The existing consent to operate validity is up to 31.12.2025. |
| 16 | Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations. | <p>There is no industrial wastewater generation from workshop within mine lease area. hence, ETP has not been installed.</p> <p>However, for washing of HEMM, Effluent treatment mechanism (Oil and grease trap) has been installed in Amtipani mine lease area.</p> <p>The sewage water from domestic uses is being collected through individual septic tanks & soak pits.</p> |
| 17 | Land ouster and land loser/affected people should be compensated and rehabilitated as per the National Policy on Resettlement and Rehabilitation of project Affected Families (NPRR), 2003 | Land ouster and land loser/affected people are being compensated and rehabilitated as per statute/guidelines. |
| 18 | The higher benches of the excavated void to be converted into water reservoir shall be terraced and afforested to stabilize the slopes. Peripheral fencing shall be done along the excavated area. | Water harvesting pond has been terraced and afforested to stabilize slopes. Peripheral fencing provided along excavated area. |
| 19 | A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval. | <p>Mining Plan along with progressive mine closure plan has been approved by Indian Bureau of Mines. Final Mine Closure Plan will be submitted in due time as per applicable guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same.</p> <p>Based on present resource estimate and peak rated production capacity mentioned in EC, tentative balance life is around 25 years. However, based on further availability of geological data in future with progress of mining, resources estimate vis-à-vis EC capacity and cut-off grade at that point of time ,balance life of the mine may change based on final resource estimate,.</p> |

| General Condition | | |
|--------------------------|---|--|
| S No | Conditions | Compliance Status |
| 1 | No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests. | Noted. |
| 2 | No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made. | Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining scheme and in scientific manner. Report is attached herewith as Annexure 4. |
| 3 | Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife departments. | <p>Conservation plan for protection of flora and fauna is prepared.</p> <p>Safeguard Measures are being Implemented on regular basis some of which are as follows:</p> <ol style="list-style-type: none"> 1. Minimum level of Noise during Mining. 2. Permanent pillars are established within in the mine lease area. 3. Daily water sprinkling on haul road. 4. Transportation is carried out during day time only. 5. Social activities are being undertaken in nearby areas etc. 6. Awareness programme on conservation of flora and fauna through CSR activities. |
| 4 | Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. | We have already established four ambient air quality monitoring stations in core zone as well as buffer zone. Monitoring is being carried out and reported to concern authorities. Report is attached as Annexure 1 . |
| 5 | Data on ambient air quality (RPM, SPM, SO ₂ and NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central | Being adhered to. Monitoring report is attached as Annexure-1 . |

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| | Pollution Control Board once in six months. | |
| 6 | Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained. | Mobile water tanker with sprinkling facility has been provided along haul roads, loading, unloading & at transfer points to arrest dust generation. |
| 7 | Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs. | Being Complied. PPEs are provided to workers. |
| 8 | Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents. | There is no industrial wastewater generation from workshop within mine lease area. We are not discharging any wastewater outside mine lease area. However, for washing of HEMM, Effluent treatment mechanism (Oil and grease trap) has been installed in Amtipani mine lease area. |
| 9 | Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. | PPE's provided. Periodic training on safety & occupational health are being imparted to workers and health checks up conducted. |
| 10 | A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization | A separate environmental management cell with suitable qualified personnel is already formed and informed attached as Annexure 3 . |
| 11 | The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work. | Mining Plan along with progressive mine closure plan has been approved by IBM, Ranchi. This is an operating mine, hence provision related to financial closure not applicable. Currently, the Regional Office is located at Ranchi. |
| 12 | The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar. | Budget is being prepared for purpose and expenditure is being reported to the ministry is attached as Annexure 2 . |

| | | |
|----|--|---|
| 13 | The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work. | Vide Point no. 11 above. |
| 14 | The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports. | Agreed and is being done. Currently, the Regional Office is located at Ranchi. |
| 15 | A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal. | Complied. |
| 16 | State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days. | Displayed. |
| 17 | The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar. | Complied. (Documents already submitted). |


Signature

**AMTIPANI BAUXITE MINE
M/S HINDALCO INDUSTRIES LTD
PHOTOGRAPHS**



(Potato Cultivation in Reclaimed areas)



(Potato and paddy Cultivation in Reclaimed areas)

AMTIPANI BAUXITE MINE
M/S HINDALCO INDUSTRIES LTD
PHOTOGRAPHS
(Plantation in Reclaimed areas)



**AMTIPANI BAUXITE MINE
M/S HINDALCO INDUSTRIES LTD
PHOTOGRAPHS**



(Rainwater harvesting pond)



(Rainwater harvesting pond)

AMTIPANI BAUXITE MINE
M/S HINDALCO INDUSTRIES LTD
PHOTOGRAPHS



(Water sprinkling at mine)



(Washing Ramp and oil-grease trap)



(Tarpaulin covered Truck)



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Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

AMTIPANI BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

OCTOBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

CONTENT

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| C | SPOT NOISE |
| D | DRINKING WATER QUALITY |
| E | SPRING WATER QUALITY |
| | |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0573/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mine Entrance Gate | |
| Sample collected on: 22.10.2020 | |

| LOCATION / IDENTIFICATION: Mine Entrance Gate | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 78.4 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 36.5 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.7 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 5.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 7.4 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.5 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.38 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.9 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 3.7 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 2.8 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

Report No: MEEPL/NOV/0574/2020-21

Date: 30th November, 2020

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Mine Office / WB*

Sample collected on: **22.10.2020**

LOCATION / IDENTIFICATION: Near Mine Office / WB

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 74.4 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 32.2 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.2 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 5.9 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.4 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 10.9 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.32 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.05 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.8 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 2.3 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.33 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0575/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mines Near Quarry – 1C | |
| Sample collected on: 22.10.2020 | |

LOCATION / IDENTIFICATION: Mines Near Quarry – 1C

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 79.1 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 42.7 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.1 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 7.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 9.3 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.38 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.2 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.94 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.30 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0576/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mines Near Quarry – 7A | |
| Sample collected on: 22.10.2020 | |

| LOCATION / IDENTIFICATION: Mines Near Quarry – 7A | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 87.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 49.3 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.8 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.3 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 10.0 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.32 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 3.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.7 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 2.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.3 |

For Mahabal Enviro Engineers Pvt. Ltd.

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SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|---------------------------------------|
| Report No: MEEPL/NOV/0577/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: Measurement of Noise | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Description: Measurement of Noise | |
| Sampling Method: Instrumental, using Sound level Metter | |
| Data Collection Date: 22.10.2020 | |

| Location/Identification | Unit | Limit (day) | Result | Limit (night) | Result |
|--------------------------------------|-----------------|-------------|--------|---------------|--------|
| Amtipani Mines – Near Mine Office | dB (A) L_{eq} | 75 | 67.1 | 70 | 52.3 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|--|--|
| Report No: MEEPL/NOV/0578/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: Measurement of Spot Noise | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Description: Measurement of Spot Noise | |
| Sampling Method: Instrumental, using Sound level Metter | |
| Data Collection Date: 22.10.2020 | |

| Location/Identification | Unit | Limit (day) | Result |
|-------------------------------|-----------------|-------------|--------|
| <i>Mines Near Quarry – 7A</i> | dB (A) L_{eq} | 75 | 71.9 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|---------------------------------------|
| Report No: MEEPL/NOV/0579/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: DRINKING WATER | |
| Client Name: <i>Hindalco Industries Limited</i> | |
| Client Address: <i>Lohardaga</i> | |
| Postal Code: <i>835203</i> | |
| State: <i>Jharkhand</i> | |
| Country: <i>India</i> | |
| Sample Type: <i>DRINKING WATER</i> | |
| Marks on Sample: Location: <i>Drinking Water of Amtipani Camp</i> | |
| Sample collected on: <i>22.10.2020</i> | |

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method reference |
|---------|--|-------|-----------|----------------------------------|---|
| 1 | Colour | Hazen | <1 | 5 Max | APHA 22 nd Ed. 2012, 2120-B, 2-6 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 3 | Taste | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 4 | Turbidity | NTU | 0.14 | 1 Max | APHA 22 nd Ed. 2012, 2130-B, 2-13 |
| 5 | pH | -- | 6.8 | 6.5-8.5 | APHA 22 nd Ed. 2012, 4500-H+-B, 4-92 |
| 6 | Free Chlorides (Residual) | mg/l | <0.5 | 0.2 min | APHA 22 nd Ed. 2012, 4500-CI-G, 4-69 |
| 7 | Total Dissolved Solids | mg/l | 198 | 500 max | IS 3025 (Part 16): 1984, Reaffirmed 2006 |
| 8 | Monochloramines | mg/l | <0.05 | -- | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 9 | Dichloramines | mg/l | <0.05 | -- | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 10 | Total hardness (as CaCO ₃) | mg/l | 37 | 200 max | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 11 | Alkalinity Total (as CaCO ₃) | mg/l | 42 | 200 max | IS 3025 (Part 237): 1986, Reaffirmed 2009 |
| 12 | Chloride (as Cl) | mg/l | 12.8 | 250 max | APHA 22 nd Ed. 2012, 4500-CI-b, 4-72 |
| 13 | Sulphate (as SO ₄) | mg/l | 7.5 | 200 max | APHA 22 nd Ed. 2012, 4500-so4-e, 4-190 |
| 14 | Nitrate (as NO ₃) | mg/l | 1.28 | 45 max | APHA 22 nd Ed. 2012, 4500-NO3-E, 4-125 |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet

MEEPL/ NOV/0579/2020-21

| | | | | | |
|----|--|------|-------|------------|--|
| 15 | Fluoride (as F) | mg/l | 0.12 | 1 max | APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87 |
| 16 | Boron (as B) | mg/l | 0.09 | 0.5 max | APHA 22 nd Ed. 2012, 4500-BB, 4-25 |
| 17 | Calcium (as Ca) | mg/l | 15.5 | 75 max | APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67 |
| 18 | Magnesium (as Mg) | mg/l | 3.3 | 30 max | APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84 |
| 19 | Ammonical Nitrogen/Total Ammonia | mg/l | <0.1 | -- | APHA 22 nd Ed. 2012, 4500-NH3-F, 4-115 |
| 20 | Iron (as Fe) | mg/l | 0.14 | 0.3 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 21 | Manganese (as Mn) | mg/l | N.D | 0.1 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 22 | Aluminium (as Al) | mg/l | 0.01 | 0.03 max | APHA 22 nd Ed. 2012, 3500-Al-B, 3-61 |
| 23 | Cadmium (as Cd) | mg/l | N.D | 0.003 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 24 | Chromium Total (as Cr) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 25 | Copper (as Cu) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 26 | Lead (as Pb) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 27 | Zinc (as Zn) | mg/l | 0.05 | 5 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 28 | Arsenic (as As) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 29 | Selenium (as Se) | mg/l | N.D | 0.001 max | APHA 22 nd Ed. 2012, 3112-B, 3-23 |
| 30 | Mercury (as hg) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 31 | Nickel (as Ni) | mg/l | <0.01 | 0.02 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 32 | Mineral Oil | mg/l | N.D | 0.5 max | IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1 |
| 33 | Cyanide (as CN) | mg/l | N.D | 0.05 max | APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44 |
| 34 | Anionic detergents as MBAS | mg/l | <0.1 | 0.2 max | APHA 22 nd ED. 2012, 5540-C.C & 5-53 |
| 35 | Phenolic compounds (as C ₆ H ₅ OH) | mg/l | N.D | 0.001 max | APHA 22 nd ED. 2012, 5530-B & C 5-4753 |
| 36 | Polynuclear aromatic hydrocarbons (PAH) | mg/l | N.D | 0.0001 max | APHA 22 nd ED. 2012, 6440, 6-93 |
| 37 | Polychlorinated Biphenyls (PCBs) | mg/l | N.D | 0.0005 max | USEPA Method 8082 |
| 38 | Sulphide (as S) | mg/l | N.D | 0.05 max | APHA 22 nd ED. 2012, 4500-S2-C 4- 175 & F 4-178 |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet

MEEPL/ NOV/0579/2020-21

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method Reference |
|---------------------------------|---------------------|-----------|--------|----------------------------------|---|
| Microbiological Analysis | | | | | |
| 1 | Total Coliforms | MPN/100mL | N.D | Absent | APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-67 |
| 2 | E-Coli | MPN/100mL | N.D | Absent | APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-76 |
| Pesticides Residues | | | | | |
| 3 | p.p DDT | µg/L | N.D | 1 | US EPA 508-1995 |
| 4 | o.p DDT | µg/L | N.D | 1 | US EPA 508-1995 |
| 5 | p.p DDE | µg/L | N.D | 1 | US EPA 508-1995 |
| 6 | o.p DDE | µg/L | N.D | 1 | US EPA 508-1995 |
| 7 | p.p DDD | µg/L | N.D | 1 | US EPA 508-1995 |
| 8 | o.p DDD | µg/L | N.D | 1 | US EPA 508-1995 |
| 9 | γ-HCH (Lindane) | µg/L | <0.01 | 2 | US EPA 508-1995 |
| 10 | α-HCH | µg/L | N.D | 0.01 | US EPA 508-1995 |
| 11 | β-HCH | µg/L | N.D | 0.04 | US EPA 508-1995 |
| 12 | δ-HCH | µg/L | N.D | 0.04 | US EPA 508-1995 |
| 13 | Butachlor | µg/L | N.D | 125 | US EPA 508-1995 |
| 14 | Alachlor | µg/L | N.D | 20 | US EPA 508-1995 |
| 15 | Atrazine | µg/L | N.D | 2 | US EPA 508-1995 |
| 16 | α Endosulfan | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 17 | β Endosulfan | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 18 | Endosulfan Sulphate | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 19 | Ethion | µg/L | N.D | 3 | US EPA 8141A-1994 |
| 20 | Malathion | µg/L | N.D | 190 | US EPA 8141A-1994 |
| 21 | Methoyl Parathion | µg/L | N.D | 0.3 | US EPA 8141A-1994 |
| 22 | Monocrotophos | µg/L | N.D | 1 | US EPA 8141A-1994 |
| 23 | Phorate | µg/L | N.D | 2 | US EPA 8141A-1994 |
| 24 | Chlorpyrifos | µg/L | N.D | 30 | US EPA 8141A-1994 |
| 25 | Aldrin | µg/L | N.D | 0.03 | US EPA 508-1995 |
| 26 | Dieldrin | µg/L | N.D | 0.03 | US EPA 508-1995 |
| Remarks: N.D- Not Detected | | | | | |

Conclusion: The Physical & Chemical Analysis report indicates that the water is not contaminated and potable.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

| | |
|--|--|
| Report No: MEEPL/NOV/0580/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer : SPRING WATER | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: SPRING WATER | |
| Marks on Sample: Location: Amtipani Bauxite Mines | |
| Quantity: 5 L X 2 No. PVC Can | |
| Sample collected on: 22.10.2020 | |

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method Reference |
|---------|--|-------|-----------|----------------------------------|---|
| 1 | Colour | Hazen | <2 | 5 Max | APHA 22 nd Ed. 2012, 2120-B, 2-6 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 3 | Taste | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 4 | Turbidity | NTU | 0.30 | 1 Max | APHA 22 nd Ed. 2012, 2130-B, 2-13 |
| 5 | pH | -- | 7.0 | 6.5-8.5 | APHA 22 nd Ed. 2012, 4500-H+-B, 4-92 |
| 6 | Free Chlorides (Residual) | mg/l | <0.5 | 0.2 min | APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69 |
| 7 | Total Dissolved Solids | mg/l | 428 | 500 max | IS 3025 (Part 16): 1984, Reaffirmed 2006 |
| 8 | Total hardness (as CaCO ₃) | mg/l | 35 | 200 max | APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69 |
| 9 | Alkalinity Total (as CaCO ₃) | mg/l | 47 | 200 max | IS 3025 (Part 237): 1986, Reaffirmed 2009 |
| 10 | Chloride (as Cl) | mg/l | 39 | 250 max | APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72 |
| 11 | Sulphate (as SO ₄) | mg/l | 25.2 | 200 max | APHA 22 nd Ed. 2012, 4500-so4-e, 4-190 |
| 12 | Boron (as B) | mg/l | 0.21 | 0.5 max | APHA 22 nd Ed. 2012, 4500-BB, 4-25 |
| 13 | Magnesium (as Mg) | mg/l | 6.3 | 30 max | APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84 |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet
MEEPL/NOV/0580/2020-21

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method Reference |
|---------|------------------------|------|--------|----------------------------------|---|
| 14 | Fluoride (as F) | mg/l | 0.13 | 1 max | APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87 |
| 15 | Calcium (as Ca) | mg/l | 8.9 | 75 max | APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67 |
| 16 | Iron (as Fe) | mg/l | 0.07 | 0.3 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 17 | Cadmium (as Cd) | mg/l | N.D | 0.003 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 18 | Chromium Total (as Cr) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 19 | Copper (as Cu) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 20 | Lead (as Pb) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 21 | Zinc (as Zn) | mg/l | 0.02 | 5 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 22 | Arsenic (as As) | mg/l | <0.01 | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 23 | Selenium (as Se) | mg/l | N.D | 0.001 max | APHA 22 nd Ed. 2012, 3112-B, 3-23 |
| 24 | Mercury (as hg) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 25 | Cyanide (as CN) | mg/l | N.D | 0.05 max | APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44 |
| 26 | Manganese (as Mn) | mg/l | N.D | 0.1 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 27 | Dissolved Oxygen | mg/l | 7.3 | 7-8 | APHA 20 th ED. Method 4500-o g. |

Conclusion: The Physical & Chemical Analysis report indicates that water is not contaminated.

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0562/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Dipa Kujam Village</i> | |
| Sample collected on: 21.10.2020 | |

| LOCATION / IDENTIFICATION: Near Dipa Kujam Village | | | | |
|--|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 67.1 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 30.4 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 2.7 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.9 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.7 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 10.3 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.31 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.8 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.4 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 3.7 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.33 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries : Gurdari

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0563/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Chathasari Village</i> | |
| Sample collected on: <i>21.10.2020</i> | |

LOCATION / IDENTIFICATION: Near Chathasari Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 59.1 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 24.2 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 5.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.1 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.8 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.35 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.04 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.7 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.5 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.8 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.31 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0564/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Shakhuapani Village | |
| Sample collected on: 21.10.2020 | |

| LOCATION / IDENTIFICATION: Near Shakhuapani Village | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 52.8 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 29.4 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.7 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.8 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 9.4 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.25 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.04 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.4 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 2.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.25 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

OCTOBER 2020

| | |
|---|--|
| Report No: MEEPL/NOV/0565/2020-21 | Date: 30 th November, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Pakri Gada Village | |
| Sample collected on: 21.10.2020 | |

| LOCATION / IDENTIFICATION: Near Pakri Gada Village | | | | |
|--|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 55.7 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 28.1 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 2.4 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 5.2 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.7 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.9 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.33 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.04 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 2.6 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 2.4 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 2.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

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Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

AMTIPANI BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

NOVEMBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,

Mobile No: +91 9431.102.102 / +91 9955.358.262,

E-mail: mahabalranchi@gmail.com

Hindalco Industries : Amtipani

Environmental Monitoring Report

NOVEMBER 2020

CONTENT

| | LOCATION – AMTIPANI |
|---|--|
| | AMBIENT AIR QUALITY – CORE ZONE |
| 1 | Mine Entrance Gate |
| 2 | Near Mine Office / WB |
| 3 | Mines Near Quarry – 1C |
| 4 | Mines Near Quarry – 7A |
| | |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0494/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mine Entrance Gate | |
| Sample collected on: 23.11.2020 | |

| LOCATION / IDENTIFICATION: Mine Entrance Gate | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 55.7 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 27.2 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.3 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.0 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 7.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.32 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.2 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.95 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.3 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.25 |

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Hindalco Industries : Amtipani

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0495/2020-21

Date: 15th September, 2020

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Mine Office / WB*

Sample collected on: **23.11.2020**

LOCATION / IDENTIFICATION: Near Mine Office / WB

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 59.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 31.8 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.3 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.28 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.1 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.88 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

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Hindalco Industries : Amtipani

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0496/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mines Near Quarry – 1C | |
| Sample collected on: 23.11.2020 | |

LOCATION / IDENTIFICATION: Mines Near Quarry – 1C

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 81.0 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 44.9 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 7.1 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.7 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 6.2 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.8 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.26 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.1 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.84 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.3 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

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Hindalco Industries : Amtipani

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0497/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Mines Near Quarry – 7A | |
| Sample collected on: 23.11.2020 | |

| LOCATION / IDENTIFICATION: Mines Near Quarry – 7A | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 74.8 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 39.2 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.9 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 6.1 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 5.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.25 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.93 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.2 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

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Hindalco Industries : Gurdari

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0490/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Dipa Kujam Village | |
| Sample collected on: 21.11.2020 | |

LOCATION / IDENTIFICATION: Near Dipa Kujam Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 59.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 27.1 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.6 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 1.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.4 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.1 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.28 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.7 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.8 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.21 |

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Hindalco Industries : Gurdari

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0491/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Chathasari Village</i> | |
| Sample collected on: <i>21.11.2020</i> | |

LOCATION / IDENTIFICATION: Near Chathasari Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 55.2 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 25.9 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 1.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.0 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 5.9 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.22 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 0.9 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.1 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.23 |

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Hindalco Industries : Gurdari

Environmental Monitoring Report

NOVEMBER 2020

| | |
|---|--|
| Report no: MEEPL/DEC/0492/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Shakhuapani Village | |
| Sample collected on: 21.11.2020 | |

| LOCATION / IDENTIFICATION: Near Shakhuapani Village | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 60.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 29.0 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.9 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.5 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 5.8 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.22 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.9 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

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Hindalco Industries : Gurdari

Environmental Monitoring Report

NOVEMBER 2020

| | |
|--|---------------------------------------|
| Report no: MEEPL/SEP/0493/2020-21 | Date: 28 th December, 2020 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Pakri Gada Village</i> | |
| Sample collected on: <i>21.11.2020</i> | |

| LOCATION / IDENTIFICATION: Near Pakri Gada Village | | | | |
|--|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 54.9 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 25.0 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.1 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 1.9 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.3 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 5.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.25 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.1 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.84 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi -110016

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At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

AMTIPANI BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

DECEMBER 2020

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Hindalco Industries : Amtipani

Environmental Monitoring Report

DECEMBER 2020

CONTENT

| | LOCATION – AMTIPANI |
|---|--|
| | AMBIENT AIR QUALITY – CORE ZONE |
| 1 | Mine Entrance Gate |
| 2 | Near Mine Office / WB |
| 3 | Mines Near Quarry – 1C |
| 4 | Mines Near Quarry – 7A |
| | |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

DECEMBER 2020

Reports no: MEEPL/JAN/0394/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mine Entrance Gate*

Sample collected on: **21.12.2020**

LOCATION / IDENTIFICATION: Mine Entrance Gate

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 59.2 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 31.5 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.8 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.1 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.6 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.28 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.3 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.5 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

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Hindalco Industries : Amtipani

Environmental Monitoring Report

DECEMBER 2020

Reports no: MEEPL/JAN/0395/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Mine Office / WB*

Sample collected on: **21.12.2020**

LOCATION / IDENTIFICATION: Near Mine Office / WB

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 44.9 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 20.7 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.0 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.19 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.95 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.19 |

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Hindalco Industries : Amtipani

Environmental Monitoring Report

DECEMBER 2020

Reports no: MEEPL/JAN/0396/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mines Near Quarry – 1C*

Sample collected on: 21.12.2020

LOCATION / IDENTIFICATION: Mines Near Quarry – 1C

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 50.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 27.1 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.0 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.6 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.8 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.1 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.19 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.04 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.90 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 0.8 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.20 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

DECEMBER 2020

Reports no: MEEPL/JAN/0397/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mines Near Quarry – 7A*

Sample collected on: 21.12.2020

LOCATION / IDENTIFICATION: Mines Near Quarry – 7A

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 63.0 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 30.4 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.2 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.0 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 7.8 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.29 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.1 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 0.9 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

For Mahabal Enviro Engineers Pvt. Ltd.

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries : Gurdari

Environmental Monitoring Report

DECEMBER 2020

| | |
|--|--------------------------------------|
| Report No. : MEEPL/JAN/0390/2020-21 | Date: 25 th January, 2021 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Dipa Kujam Village</i> | |
| Sample collected on: 19.12.2020 | |

| LOCATION / IDENTIFICATION: Near Dipa Kujam Village | | | | |
|--|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 61.9 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 33.7 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.0 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.5 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.9 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.21 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.98 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.3 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.19 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0391/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Chathasari Village*

Sample collected on: **19.12.2020**

LOCATION / IDENTIFICATION: Near Chathasari Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 48.5 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 22.9 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.7 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.8 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.1 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.16 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.88 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.2 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.17 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

DECEMBER 2020

| | |
|---|---|
| Report No. : MEEPL/JAN/0392/2020-21 | Date: 25 th January, 2021 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Shakhuapani Village | |
| Sample collected on: 19.12.2020 | |

| LOCATION / IDENTIFICATION: Near Shakhuapani Village | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 41.6 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 20.9 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.5 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.0 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.5 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.9 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.13 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.4 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.7 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.18 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/OCT/0493/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Pakri Gada Village*

Sample collected on: 19.12.2020

LOCATION / IDENTIFICATION: Near Pakri Gada Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 49.2 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 23.6 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 3.9 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.2 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 3.8 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.4 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.15 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.3 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.15 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden, Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.

E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
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AMTIPANI BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

JANUARY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

JANUARY 2021

CONTENT

| | LOCATION – AMTIPANI |
|---|------------------------|
| A | DRINKING WATER QUALITY |
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Hindalco Industries : Amtipani

Environmental Monitoring Report

JANUARY 2021

| | |
|---|---------------------------------------|
| Report No.: MEEPL/FEB/0390/2020-21 | Date: 10 th February, 2021 |
| Sample described by customer: DRINKING WATER | |
| Client Name: <i>Hindalco Industries Limited</i> | |
| Client Address: <i>Lohardaga</i> | |
| Postal Code: <i>835203</i> | |
| State: <i>Jharkhand</i> | |
| Country: <i>India</i> | |
| Sample Type: <i>DRINKING WATER</i> | |
| Marks on Sample: Location: <i>Drinking Water of Amtipani Camp</i> | |
| Sample collected on: <i>21.01.2021</i> | |

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method reference |
|---------|--|-------|-----------|----------------------------------|---|
| 1 | Colour | Hazen | <1 | 5 Max | APHA 22 nd Ed. 2012, 2120-B, 2-6 |
| 2 | Odour | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 3 | Taste | -- | Agreeable | Agreeable | IS 3025 (Part 7): 1983, Reaffirmed 2006 |
| 4 | Turbidity | NTU | 0.14 | 1 Max | APHA 22 nd Ed. 2012, 2130-B, 2-13 |
| 5 | pH | -- | 6.9 | 6.5-8.5 | APHA 22 nd Ed. 2012, 4500-H+-B, 4-92 |
| 6 | Free Chlorides (Residual) | mg/l | <0.5 | 0.2 min | APHA 22 nd Ed. 2012, 4500-CI-G, 4-69 |
| 7 | Total Dissolved Solids | mg/l | 296 | 500 max | IS 3025 (Part 16): 1984, Reaffirmed 2006 |
| 8 | Monochloramines | mg/l | <0.05 | -- | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 9 | Dichloramines | mg/l | <0.05 | -- | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 10 | Total hardness (as CaCO ₃) | mg/l | 39 | 200 max | APHA 22 nd Ed. 2012, 4500-CIG, 4-69 |
| 11 | Alkalinity Total (as CaCO ₃) | mg/l | 35 | 200 max | IS 3025 (Part 237): 1986, Reaffirmed 2009 |
| 12 | Chloride (as Cl) | mg/l | 15.6 | 250 max | APHA 22 nd Ed. 2012, 4500-CI-b, 4-72 |
| 13 | Sulphate (as SO ₄) | mg/l | 7.1 | 200 max | APHA 22 nd Ed. 2012, 4500-so4-e, 4-190 |
| 14 | Nitrate (as NO ₃) | mg/l | 1.235 | 45 max | APHA 22 nd Ed. 2012, 4500-NO3-E, 4-125 |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

JANUARY 2021

Continuation Sheet

MEEPL/ FEB/0390/2020-21

| | | | | | |
|----|--|------|-------|------------|---|
| 15 | Fluoride (as F) | mg/l | 0.14 | 1 max | APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87 |
| 16 | Boron (as B) | mg/l | 0.10 | 0.5 max | APHA 22 nd Ed. 2012, 4500-BB, 4-25 |
| 17 | Calcium (as Ca) | mg/l | 18.5 | 75 max | APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67 |
| 18 | Magnesium (as Mg) | mg/l | 1.9 | 30 max | APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84 |
| 19 | Ammonical Nitrogen/Total Ammonia | mg/l | <0.1 | -- | APHA 22 nd Ed. 2012, 4500-NH3-F, 4-115 |
| 20 | Iron (as Fe) | mg/l | 0.14 | 0.3 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 21 | Manganese (as Mn) | mg/l | N.D | 0.1 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 22 | Aluminium (as Al) | mg/l | 0.01 | 0.03 max | APHA 22 nd Ed. 2012, 3500-Al-B, 3-61 |
| 23 | Cadmium (as Cd) | mg/l | N.D | 0.003 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 24 | Chromium Total (as Cr) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 25 | Copper (as Cu) | mg/l | N.D | 0.05 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 26 | Lead (as Pb) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 27 | Zinc (as Zn) | mg/l | 0.05 | 5 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 28 | Arsenic (as As) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 29 | Selenium (as Se) | mg/l | N.D | 0.001 max | APHA 22 nd Ed. 2012, 3112-B, 3-23 |
| 30 | Mercury (as hg) | mg/l | N.D | 0.01 max | APHA 22 nd Ed. 2012, 3114-B, 3-38 |
| 31 | Nickel (as Ni) | mg/l | <0.01 | 0.02 max | APHA 22 nd Ed. 2012, 3111-B, 3-18 |
| 32 | Mineral Oil | mg/l | N.D | 0.5 max | IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1 |
| 33 | Cyanide (as CN) | mg/l | N.D | 0.05 max | APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44 |
| 34 | Anionic detergents as MBAS | mg/l | <0.1 | 0.2 max | APHA 22 nd ED. 2012, 5540-C.C & 5-53 |
| 35 | Phenolic compounds (as C ₆ H ₅ OH) | mg/l | N.D | 0.001 max | APHA 22 nd ED. 2012, 5530-B & C 5-4753 |
| 36 | Polynuclear aromatic hydrocarbons (PAH) | mg/l | N.D | 0.0001 max | APHA 22 nd ED. 2012, 6440, 6-93 |
| 37 | Polychlorinated Biphenyls (PCBs) | mg/l | N.D | 0.0005 max | USEPA Method 8082 |
| 38 | Sulphide (as S) | mg/l | N.D | 0.05 max | APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178 |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

JANUARY 2021

Continuation Sheet

MEEPL/ FEB/0390/2020-21

| Sl. No. | Parameters | Unit | Result | Acceptable Limit (IS 10500:2012) | Method Reference |
|---------------------------------|---------------------|-----------|--------|----------------------------------|---|
| Microbiological Analysis | | | | | |
| 1 | Total Coliforms | MPN/100mL | N.D | Absent | APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-67 |
| 2 | E-Coli | MPN/100mL | N.D | Absent | APHA 22 nd Ed. 2012, 9221-B & C, 9-66, 9-69 and 9-76 |
| Pesticides Residues | | | | | |
| 3 | p.p DDT | µg/L | N.D | 1 | US EPA 508-1995 |
| 4 | o.p DDT | µg/L | N.D | 1 | US EPA 508-1995 |
| 5 | p.p DDE | µg/L | N.D | 1 | US EPA 508-1995 |
| 6 | o.p DDE | µg/L | N.D | 1 | US EPA 508-1995 |
| 7 | p.p DDD | µg/L | N.D | 1 | US EPA 508-1995 |
| 8 | o.p DDD | µg/L | N.D | 1 | US EPA 508-1995 |
| 9 | γ-HCH (Lindane) | µg/L | <0.01 | 2 | US EPA 508-1995 |
| 10 | α-HCH | µg/L | N.D | 0.01 | US EPA 508-1995 |
| 11 | β-HCH | µg/L | N.D | 0.04 | US EPA 508-1995 |
| 12 | Σ-HCH | µg/L | N.D | 0.04 | US EPA 508-1995 |
| 13 | Butachlor | µg/L | N.D | 125 | US EPA 508-1995 |
| 14 | Alachlor | µg/L | N.D | 20 | US EPA 508-1995 |
| 15 | Atrazine | µg/L | N.D | 2 | US EPA 508-1995 |
| 16 | α Endosulfan | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 17 | β Endosulfan | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 18 | Endosulfan Sulphate | µg/L | N.D | 0.4 | US EPA 508-1995 |
| 19 | Ethion | µg/L | N.D | 3 | US EPA 8141A-1994 |
| 20 | Malathion | µg/L | N.D | 190 | US EPA 8141A-1994 |
| 21 | Methoyl Parathion | µg/L | N.D | 0.3 | US EPA 8141A-1994 |
| 22 | Monocrotophos | µg/L | N.D | 1 | US EPA 8141A-1994 |
| 23 | Phorate | µg/L | N.D | 2 | US EPA 8141A-1994 |
| 24 | Chlorpyrifos | µg/L | N.D | 30 | US EPA 8141A-1994 |
| 25 | Aldrin | µg/L | N.D | 0.03 | US EPA 508-1995 |
| 26 | Dieldrin | µg/L | N.D | 0.03 | US EPA 508-1995 |
| Remarks: N.D- Not Detected | | | | | |

Conclusion: The Physical & Chemical Analysis report indicates that the water is not contaminated and potable.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE






Sun-Tech

40 P Tupudana Industrial Area, Ranchi-834003, Jharkhand

TEL.- 7808266661/2/3



TEST REPORT

| | | | |
|---------------------------|---|------------------------------|---|
| Test Report No. | ST/TR/21/01/ 2763 | Date of Receipt of Test Item | 22-01-2021 |
| Job Code | M0840121 | Page | 1 of 1 |
| Report Date | 22-01-2021 | Date of Completion of Test | 22-01-2021 |
| ULR | T C 5 4 3 2 2 1 0 0 0 0 | | 0 0 2 6 3 F |
| Customer's Name & Address | AMTIPANI BAUXITE MINES (190.95 HECT) HINDALCO AMTIPANI, GUMLA DIST:- GUMLA | |  Certificate. no. TC-5432 |
| Reference & date | NIL | | |
| Discipline | CHEMICAL | Group | ATMOSPHERIC POLLUTION |
| Material/ Item | ABSORBED POLLUTANT IN GFA & IMPINGER FROM SITE | | |
| Sampling Location | NORTH:- 23°20'36" | | EAST:- 84°15' 25" |
| Nature of Industry | BAUXITE MINES | | |
| Date of Sampling | 21-01-2021 | | |

CHEMICAL ANALYSIS OF AMBIENT AIR QUALITY

| S. NO. | SAMPLE NO. | POLLUTANT | TEST METHOD | OUTLET | | | | LIMIT* |
|--------|------------|--|----------------------|--------------------|----------------------|-----------------------|----------------------|------------------------------|
| | | | | MINE ENTRANCE GATE | NEAR MINE OFFICE/ WB | MINES NEAR QUARRY 1 D | MINES NEAR QUARRY 2D | |
| 1 | 86046 | Particulate Matter (PM ₁₀), µg/m ³ | IS: 5182 (P-23):2006 | 89.89 | 91.24 | 90.50 | 93.69 | 100 µg/m ³ , Max. |
| 2 | 86047 | Sulphur Dioxide (SO ₂), µg/m ³ | IS: 5182 (P-2): 2001 | 5.36 | 5.63 | 5.43 | 5.57 | 80 µg/m ³ , Max. |
| 3 | 86048 | Nitrogen Dioxide (NO ₂), µg/m ³ | IS: 5182 (P-6): 2006 | 24.53 | 24.88 | 24.02 | 24.62 | 80 µg/m ³ , Max. |
| 4 | 86049 | Particulate Matter (PM _{2.5}), µg/m ³ | IS: 5182 (P-23):2006 | 53.26 | 53.33 | 53.19 | 52.63 | 60 µg/m ³ , Max. |

Note:- *As per National Ambient Air Quality Standards by Central Pollution Control Board (CPCB) Notification, New Delhi 18/11/2009

REMARK (if any) :- OK

*****END OF REPORT*****

Done By:- Sukanta, Tanmay

Sukanta

SR. SCIENTIST: SUKANTA

Tanmay

SR. SCIENTIST ASST.: TANMAY

801173


Preeti Varma
Authorized Signatory

DECLARATION:

- Sample will be retained for three months
- The test results relates only to the sample submitted for testing and as per applicable parameters. Product endorsement is neither inferred nor implied.
- Total liability of our work is limited only to invoiced amount
- The report can not be used as an evidence in the court of law without written approval of Laboratory
- This report cannot be reproduced except in full without prior written approval from the Laboratory Director
- All disputes subject to Ranchi Jurisdiction only
- The results out of NABL Scope are * marked & Test report without Hologram is INVALID

Doc. No.F01(7.8) Amnd.03



Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi -110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden, Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 243705 20 / 6672.

E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

AMTIPANI BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

FEBRUARY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,

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E-mail: mahabalranchi@gmail.com

Hindalco Industries : Amtipani

Environmental Monitoring Report

FEBRUARY 2021

CONTENT

| | LOCATION – AMTIPANI |
|---|--|
| | AMBIENT AIR QUALITY – CORE ZONE |
| 1 | Mine Entrance Gate |
| 2 | Near Mine Office / WB |
| 3 | Mines Near Quarry – 1C |
| 4 | Mines Near Quarry – 7A |
| | |





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Hindalco Industries : Amtipani

Environmental Monitoring Report

FEBRUARY 2021

Reports no: MEEPL/MAR/0444/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mine Entrance Gate*

Sample collected on: **22.02.2021**

LOCATION / IDENTIFICATION: Mine Entrance Gate

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 65 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 39 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.3 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.31 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.3 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.5 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.24 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

FEBRUARY 2021

Reports no: MEEPL/MAR/0445/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Mine Office / WB*

Sample collected on: **22.02.2021**

LOCATION / IDENTIFICATION: Near Mine Office / WB

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 56 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 33 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.0 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.2 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.1 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.4 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.23 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.03 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.91 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.1 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Amtipani

Environmental Monitoring Report

FEBRUARY 2021

Reports no: MEEPL/MAR/0446/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mines Near Quarry – 1C*

Sample collected on: 22.02.2021

LOCATION / IDENTIFICATION: Mines Near Quarry – 1C

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 59 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 34 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.9 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.2 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.5 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.24 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.04 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.93 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 0.8 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.20 |

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Amtipani

Environmental Monitoring Report

FEBRUARY 2021

Reports no: MEEPL/MAR/0447/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mines Near Quarry – 7A*

Sample collected on: 22.02.2021

LOCATION / IDENTIFICATION: Mines Near Quarry – 7A

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 70 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 39 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.8 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 4.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 5.7 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.1 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.33 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.1 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 0.9 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.22 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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E-mail: mahabalanranchi@gmail.com

Hindalco Industries : Gurdari

Environmental Monitoring Report

FEBRUARY 2021

| | |
|---|---|
| Report No. : MEEPL/MAR/0440/2020-21 | Date: 25 th March, 2021 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample Type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: <i>Near Dipa Kujam Village</i> | |
| Sample collected on: 20.02.2021 | |

| LOCATION / IDENTIFICATION: Near Dipa Kujam Village | | | | |
|--|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 70 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 41 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 7.3 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 5.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 7.1 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 9.5 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.28 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.3 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.0 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.3 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.19 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries : Gurdari

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0441/2020-21

Date: 25th March, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Chathasari Village*

Sample collected on: **20.02.2021**

LOCATION / IDENTIFICATION: Near Chathasari Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 57 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 33 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 5.6 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 3.1 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 6.3 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 8.7 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.24 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.0 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.95 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.2 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.17 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

FEBRUARY 2021

| | |
|--|------------------------------------|
| Report No. : MEEPL/MAR/0442/2020-21 | Date: 25 th March, 2021 |
| Sample described by customer: AMBIENT AIR QUALITY MONITORING | |
| Client Name: Hindalco Industries Limited | |
| Client Address: Lohardaga | |
| Postal Code: 835203 | |
| State: Jharkhand | |
| Country: India | |
| Sample type: AMBIENT AIR QUALITY MONITORING | |
| Marks on Sample: Location: Near Shakhuapani Village | |
| Sample collected on: 20.02.2021 | |

| LOCATION / IDENTIFICATION: Near Shakhuapani Village | | | | |
|---|--|-------------------|----------------|---------------|
| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 47 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 28 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.2 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.5 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.9 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.5 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.18 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.01 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.4 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 0.7 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.18 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0443/2020-21

Date: 25th March, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Near Pakri Gada Village*

Sample collected on: 20.02.2021

LOCATION / IDENTIFICATION: Near Pakri Gada Village

| Sl. No. | PARAMETERS | UNIT | Standard Limit | Concentration |
|---------|--|-------------------|----------------|---------------|
| 01. | Particulate Matter (size less than 10 µm) PM ₁₀ | µg/m ³ | 100 | 53 |
| 02. | Particulate Matter (size less than 2.5 µm) PM _{2.5} | µg/m ³ | 60 | 31 |
| 03. | Sulphur Dioxide (SO ₂) | µg/m ³ | 80 | 4.6 |
| 04. | Nitrogen Dioxide (NO ₂) | µg/m ³ | 80 | 2.8 |
| 05. | Ammonia (NH ₃) | µg/m ³ | 400 | 4.2 |
| 06. | Ozone (O ₃) | µg/m ³ | 180 | 6.8 |
| 07. | Carbon Monoxide (CO) | mg/m ³ | 02 | 0.19 |
| 08. | Lead (Pb) | µg/m ³ | 1.0 | 0.02 |
| 09. | Nickel (Ni) | µg/m ³ | 20 | 1.5 |
| 10. | Arsenic (As) | µg/m ³ | 06 | 1.3 |
| 11. | Benzene (C ₆ H ₆) | µg/m ³ | 05 | 1.0 |
| 12. | Benzo (a) Pyrene | µg/m ³ | 01 | 0.18 |

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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Email: info@elespl.com ; eles.ranchi@gmail.com
GST NO:- 20AAECE9713D1Z4 ☎ : 0651-2290103, 9931289451

ISO 9001:2015 CERTIFIED, OHSAS 18001:2007 CERTIFIED
NABL Accredited & JSPCB Certified Lab. for
Environmental Pollution Monitoring & Analysis

TEST REPORT OF AMBIENT AIR QUALITY MONITORING

| | | | |
|--------------------------------------|--|----------------------------------|----------------------------|
| Test Report No. : ELES/RNC/2021/0641 | | Report Release Date : 21.04.2021 | |
| Application No. :10215282 | | Work Order Date : 11.03.2021 | |
| CUSTOMER DETAILS | | SAMPLE DETAILS | |
| Customer Name | : Amtipani Bauxite Mines (190.95 Hect) Hindalco | Sampling Date | : 19.04.2021 to 20.04.2021 |
| Address | : Amtipani, Dist.-Gumla | Sample Received Date | : 20.04.2021 |
| | | Type of Sample | : Ambient Air |
| | | Sampling Procedure | : ELES/DOC/SMPL/02 |
| | | Sample Drawn By | : ELES Pvt. Ltd. |
| Plant Status | : Operational | Period of Analysis | : 20.04.2021 to 21.04.2021 |

METEOROLOGICAL INFORMATION

| | | | |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 30 | 2 | Barometric Pressure (mmHg) : 748 |
| 3 | Relative Humidity (%) : 58 | 4 | Weather Condition : Clear |

| Parameters | | Particulate Matter (PM10) | Suspended Particulate Matter (SPM) | Sulphur Di-Oxide (SO ₂) | Nitrogen Di-Oxide (NO ₂) | |
|-----------------------------------|----------------|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|-------------------|
| Test Protocol | | IS 5182 (P-23) | IS:5182 (P-4) | IS 5182 (P-2) | IS 5182 (P-6) | |
| Locations | Limits | | 100 | 500 | 80 | 80 |
| | Time | Unit | µg/m ³ | µg/m ³ | µg/m ³ | µg/m ³ |
| Near Entrance Gate | 09:45 – 13:43 | 78 | 351 | 14.2 | 32.5 | |
| | 13:43 – 17:39 | | | 13.5 | 34.8 | |
| | 17:45 – 21:41 | 65 | 217 | 11.1 | 35.7 | |
| | 21:41 – 01:38 | | | 13.6 | 30.4 | |
| Sample ID ELES/RNC/PCB/AA/2639 | 01:44 – 05:39 | 73 | 249 | 5.5 | 32.0 | |
| | 05:39 – 09:38 | | | 14.9 | 35.1 | |
| Latitude:23°20'42.71"N | Average | | 72 | 272 | 12.1 | 33.4 |
| Longitude :84°15'16.28"E | | | | | | |
| Near Main Gate | 09:52 – 13:51 | 71 | 212 | 10.5 | 30.2 | |
| | 13:51 – 17:49 | | | 12.2 | 29.5 | |
| | 17:56 – 21:47 | 66 | 134 | 9.8 | 33.3 | |
| | 21:47 – 01:49 | | | 10.1 | 31.8 | |
| Sample ID ELES/RNC/PCB/AA/2640 | 01:57 – 05:48 | 70 | 178 | 10.5 | 28.2 | |
| | 05:48 – 09:48 | | | 12.5 | 32.5 | |
| Latitude:23°20'36.64"N | Average | | 69 | 175 | 10.9 | 30.9 |
| Longitude :84°15'29.19"E | | | | | | |
| Mines Near Quarry - 10 | 10:04 – 14:01 | 73 | 311 | 12.4 | 33.5 | |
| | 14:01 – 18:05 | | | 10.2 | 34.2 | |
| | 18:11 – 22:08 | 58 | 155 | 9.2 | 30.8 | |
| | 22:08 – 02:01 | | | 12.8 | 29.1 | |
| Sample ID ELES/RNC/PCB/AA/2641 | 02:09 – 06:11 | 69 | 193 | 9.5 | 28.4 | |
| | 06:11 – 10:00 | | | 13.2 | 32.8 | |
| Latitude:23°20'12.77"N | Average | | 67 | 220 | 11.2 | 31.5 |
| Longitude :84°15'25.22"E | | | | | | |

*****End of Report*****

(Signature)

Authorized Signatory
SANDIP BERA
SENIOR MANAGER
ELES PVT. LTD.

Note

- *Any observations or complaints regarding the reports shall be done within 15 days from the date of report received.*
- *After 15 days no complaints will be accepted.*
- *The test report should not be reproduced without the written approval of the laboratory.*
- *All time mentioned are in 24 hours format.*
- *Abbreviation :*
 - N/A (Not Applicable)*
 - BDL (Below Detection Limit)*
 - D.L (Detection Limit)*

.....

Annexure 1**Piezometer reading - Amtipani Mines**

| S No | Month | Depth (meter) |
|-------------|--------------|----------------------|
| 1 | October'20 | 32.27 |
| 2 | November'20 | 32.05 |
| 3 | December'20 | 32.11 |
| 4 | January'21 | 32.79 |
| 5 | February'21 | 32.51 |
| 6 | March'21 | 32.29 |

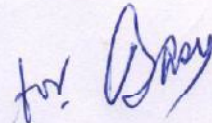
Annexure-2

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2020-21

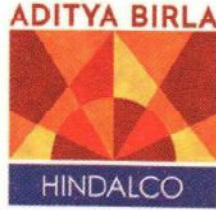
The composite cost during the year 2020-21 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115.13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha) and Bimarla Bauxite Mines (134.52 ha).

| S No | Description | Budget (in Rupees) FY 2020-21 | Actual (in Rupees) FY 2020-21 (From October'20 to March'21) |
|------|---|----------------------------------|---|
| 1 | Pollution Control & Environment monitoring | 38,21,524.00 | 26,99,875.07 |
| 2 | Reclamation/ Back filing & Rehabilitation** | 3,21,50,000.00 | 2,90,93,388.00 |
| 3 | Green belt, Plantation & Water spraying arrangement | 49,25,800.00 | 46,95,346.80 |
| 4 | Rural Development | 3,20,21,451.00 | 1,65,48,825.39 |

**Part of OB removed cost.

for 

(Basudev Gangopadhyay)
Head (Geology & Environment)



Annexure 3

Date – 06.07.2020

Office Order

Environmental Cell has been re-constituted at Amtipani Bauxite Mine (Area 190.95 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

1. Mr. Anand Mishra (Coordinator)
2. Mr. Preet Ranjan - Geologist
3. Mr. Harsh Khandelwal (Member)
4. Mr. Abhay Kumar – Environment Engineer

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental act rule and regulation for the above mine.

Basudev Gangopadhyay
Senior Executive (Quality & Environment)

Annexure 4


| Production, Mined Out, Back Filled and Over Burden removal from October'20 to March'21 | | | | | | | | | |
|---|----------------------------|------------------------|---------------------------|--------------------------|-----------------|---------------------|-----------------------|--------------------|--|
| S No | Name of the Mines | Mining lease area (ha) | Production Capacity (MT)* | Lease Period* | Production (MT) | Mined out area (ha) | Back filled area (ha) | Over burden (Cu.M) | |
| 1 | Bagru bauxite Mine | 75.41 | 85000 | 22.01.1974 to 31.03.2030 | NIL | NIL | NIL | NIL | |
| 2 | Bhusar Bauxite Mine | 65.31 | 280000 | 11.07.1981 to 31.03.2030 | 25490 | 0.178 | 0.15 | 0.00 | |
| 3 | Hisri (New) Bauxite Mine | 14.55 | 100000 | 19.07.1981 to 31.03.2030 | 57149 | 0.512 | 0.00 | 0.00 | |
| 4 | Kujam - I Bauxite Mine | 80.87 | 150000 | 13.03.2006 to 12.03.2056 | 37780 | 1.52 | 4.28 | 50116.10 | |
| 5 | Kujam - II Bauxite Mine | 157.38 | 300000 | 24.03.2006 to 23.03.2056 | 90915 | 3.19 | 6.18 | 157480.42 | |
| 6 | Amtipani Bauxite Mine | 190.95 | 150000 | 13.03.2006 to 12.03.2056 | 79180 | 3.27 | 8.420 | 285021.770 | |
| 7 | Gurdari Bauxite Mine | 584.19 | 325000 | 23.03.1985 to 22.03.2035 | 138808 | 6.52 | 6.23 | 208233.55 | |
| 8 | Shrengdag A Bauxite Mine | 155.81 | 260000 | 16.10.1974 to 31.03.2030 | 81960 | 1.9 | 1.2 | 225276.75 | |
| 9 | Shrengdag B Bauxite Mine | 140.07 | 100000 | 04.10.1978 to 31.03.2030 | Nil | Nil | Nil | Nil | |
| 10 | Jalim & Sanai Bauxite Mine | 12.14 | 50000 | 16.10.1974 to 31.03.2030 | 23128 | 0.46 | 0.44 | 22658.4 | |

AH

Annexure 4

| | | | | | | | | | |
|--|--------------------------|---------|--------|--------------------------------|--------|------|------|-----------|-----|
| 11 | Orsapat Bauxite Mine | 196.36 | 200000 | 17.07.1986 to 16.07.2036 | NIL | NIL | NIL | NIL | NIL |
| 12 | Chiro Kukud bauxite Mine | 152.57 | 100000 | 29.01.1985 to 28.01.2035 | NIL | NIL | NIL | NIL | NIL |
| 13 | Pakhar (8.09) | 8.09 | 80000 | 16.05.1973 to 31.03.2030 | NIL | NIL | NIL | NIL | NIL |
| 14 | Pakhar (35.12) | 35.12 | 200000 | 17.04.1975 to 31.03.2030 | NIL | NIL | NIL | NIL | NIL |
| 15 | Pakhar (115.13) | 115.13 | 300000 | 19.07.1996 to 31.03.2030 | 111000 | 0.80 | 0.70 | 272905.96 | |
| Minerals & Minerals Limited | | | | | | | | | |
| 16 | Pakhar (15.58) | 15.58 | 60000 | 28.04.1965 to 31.03.2030 | 3200 | 0.20 | 0.10 | 31346.54 | |
| 17 | Pakhar (109.507) | 109.507 | 280000 | 26.07.2008 to 25.07.2058 | 108500 | 0.46 | 0.75 | 234214.42 | |
| 18 | Bimarla Bauxite Mine | 134.37 | 300000 | 18.07.2009 to 17.07.2059 | 62100 | 2.95 | 2.50 | 160141.10 | |

*Static information about the mines included in the above table

for 

Basudev Gangopadhyay
Head (Geology & Environment)