

HIL/LHD/ENV/MoEF/868

Date: 26.11.2020

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 Kujam-I Bauxite Mining project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period April'20 to September'20.

Ref: Environmental Clearance letter no J-11015/240/2005-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 **Kujam-I (80.87 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period April'20 to September'20. The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
80.87	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

: Kujam I Bauxite Mine (80.87 ha)
M/s Hindalco Industries Ltd

Environment Clearance No & date : J-11015/240/2005-IA.II (M), dated 14.08.2006

Period of compliance Report : From 1st April 2020 to 30th September 2020

S No	Conditions	Compliance Status
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 fulfilled post which consent to operate has been obtained from time to time. Existing consent to operate is valid upto 31.12.2020. We have applied on line renewal of CTO for further validity in JSPCB portal. Productions of bauxite are within limits specified in consent to operate.
2	The mining operations shall not intersect ground water 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 maintained 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.	The 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 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	<p>Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.</p>	<p>Top soil is being stacked separately for reclamation and rehabilitation of mined out areas with progress of Mining.</p>
5	<p>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>	<p>Concurrent backfilling is being done in mined out pit.</p> <p>No permanent external OB dump is in the project area.</p> <p>Afforestation is being carried out progressively over reclaimed area for rehabilitation.</p> <p>The detail of back filling is attached here with as Annexure - 4</p>
6	<p>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.</p> <p>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>	<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 run off 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	<p>Plantation shall be raised in an area of 43.5 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>	<p>Plantation is being carried out as per with progress of mining. During year 2020-21 around 1895 nos. of saplings have been planted. Total 3.16 ha area in plantation has been planted till date. In addition to this agricultural activities is going on reclaimed land.</p>

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.	Suitable conservation measures to augment ground water have been taken as directed in CGWB NOC Viz. Constructing water harvesting pond, garland drain etc. Water harvesting scheme is also prepared.
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.	We are not using ground water for any mining purpose. There is no chance of intersection of ground water table during mining operation at present and in future. Piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as Annexure 1.
10	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Water is being drawn from rain water harvesting pond located at mined out pit. We are not using ground water/natural water resources for mining purpose.
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 water 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 are undertaken 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 ground vibrations and to arrest fly rocks and	Blasting time is fixed during Lunch time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. All efforts are being taken to

	boulders should be implemented.	mitigate impact of blasting.
15	Consent to operate should be obtained from SPCB prior to start of production of mine.	Consent to operate obtained from JSPCB prior to start of production from Mines, which is being renewed by JSPCB periodically. Existing consent to Operate is valid up to 31.12.2020. We have applied on line renewal of CTO for further validity in JSPCB portal.
16	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	The sewage water from domestic uses is being collected through individual septic tanks & soaks pits. Sludge is collected to an integrated soak pit. Effluent treatment mechanism (Oil-grease trap) are provided where the maintenance of machine is carried out.
17	Land oustees 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 acquisition activities is done as per CNT Act and with permission of competent authority i.e. concerned Deputy Commissioner (D.C.) and consent of Raiyat (Land Owner) The land compensation and other related benefit are being provided as per norms set out in land purchase agreement with the consent of DC.
18	The higher benches of the excavated void to be converted into water reservoir shall be terraced and afforested to stabilize the slopes. Pcripheral fencing shall be done along the excavated area.	Is being and will be implemented with progress of mining. Water harvesting pond is provided. Fencing provided as required.
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.	Final mine closure plan will be submitted at appropriate time as per applicable guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same. Presently we are having approved progressive mine closure plan. Based on present resource estimate, and peak rated production capacity mentioned in EC, the tentative balance life is around 5 years. Balance life of the mine may change based on final resource estimate, EC capacity and cut-off grade at that point of time.

General Conditions

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. Report is attached 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>Suitable conservation measures implemented for protection of flora & fauna is being implemented as under:</p> <ol style="list-style-type: none"> 1) Permanent pillars are established Within the mine lease area. 2) Maintenance of the forest road 3) Ensured necessary air and noise Pollution control measures. 4) Daily water sprinkling is being carried out on the forest road 5) Transportation is done only in day time. 6) Awareness programme on conservation of flora and fauna through CSR activities. <p>Further, afresh preparation of wildlife conservation plan is in progress in consultation with the local forest and wildlife departments.</p>
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 , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.	Monitoring Reports is enclosed as Annexure -1

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.	Water spraying arrangement on haul roads, loading and unloading and at transfer points is being carried out on regular basis.
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.	PPE's provided to workers at noise prone areas
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 within mine lease area. We are not discharging any wastewater outside mine lease area. Effluent treatment mechanism (Oil-grease trap) are provided where the maintenance of machine is carried out.
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 (safety shoes, goggles, ear muffs) provided to workers at dusty areas. Periodic health checks up/ occupational health checkup are in practice for workers at Mine.
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	Separate Environmental Management Cell (EMC) is already formed with qualified personals and informed 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.	Date of financial closure is not applicable since it is operating mine. Now Regional office is 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.	Year wise expenditure is being reported to the Ministry and its Regional Office located at Ranchi. Copy is enclosed 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. Now Regional office is 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



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Mahabal Enviro Engineers Pvt. Ltd.
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

APRIL 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Branch Office:

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CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp
	AMBIENT NOISE
	SPOT NOISE
	SPRING WATER QUALITY
	DRINKING WATER ANALYSIS





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0441/2020-21	Date: 11 th May, 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: Kujam Quarry 430	
Sample collected on: 18.04.2020	

LOCATION / IDENTIFICATION: Kujam Quarry 430				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	77.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.8
05.	Ammonia (NH ₃)	µg/m ³	400	5.8
06.	Ozone (O ₃)	µg/m ³	180	10.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
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	2.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0442/2020-21	Date: 11 th May, 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: Talabkhanta 4A 13	
Sample collected on: 18.04.2020	

LOCATION / IDENTIFICATION: Talabkhanta 4A 13				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	85.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	42.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.2
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	10.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	2.4
10.	Arsenic (As)	µg/m ³	06	3.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0443/2020-21	Date: 11 th May, 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: 4 A 11 Football Ground	
Sample collected on: 18.04.2020	

LOCATION / IDENTIFICATION: 4 A 11 Football Ground				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	82.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41.5
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	4.8
06.	Ozone (O ₃)	µg/m ³	180	10.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
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	3.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.23

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0444/2020-21	Date: 11 th May, 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: Camp	
Sample collected on: 18.04.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	88.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	42.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.8
05.	Ammonia (NH ₃)	µg/m ³	400	3.4
06.	Ozone (O ₃)	µg/m ³	180	10.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.8
10.	Arsenic (As)	µg/m ³	06	2.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

April 2020

Report No: MEEPL/MAY/0465/2020-21	Date: 11 th May, 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: 22.04.2020	

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	65.4
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	4.7
05.	Ammonia (NH ₃)	µg/m ³	400	3.4
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

April 2020

Report No: MEEPL/MAY/0466/2020-21	Date: 11 th May, 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 Chathasari Village	
Sample collected on: 22.04.2020	

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	56.4
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	3.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.8
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	8.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
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	3.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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Hindalco Industries : Gurdari

Environmental Monitoring Report

April 2020

Report No: MEEPL/MAY/0467/2020-21	Date: 11 th May, 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 Shakuapani Village</i>	
Sample collected on: 22.04.2020	

LOCATION / IDENTIFICATION: Near Shakuapani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	52.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.4
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	0.23
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	2.6
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 : Gurdari

Environmental Monitoring Report

April 2020

Report No: MEEPL/MAY/0468/2020-21	Date: 11 th May, 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: 22.04.2020	

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	54
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	24.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.4
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	0.31
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	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0445/2020-21	Date: 11 th May, 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: 18.04.2020	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Kujam-I (80.87 ha.)	dB (A) L_{eq}	75	65.3	70	57.1

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0446/2020-21	Date: 11 th May, 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: 18.04.2020	

Location/Identification	Unit	Limit (day)	Result
Kujam-I Mines (80.87 ha.) Drill rig at Working Pit	dB (A) L _{eq}	75	72.8

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0447/2020-21	Date: 11 th May, 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: Kujam – I Bauxite Mines	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on: 18.04.2020	

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	0.29	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-CI-G, 4-69
7	Total Dissolved Solids	mg/l	381	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	39	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Alkalinity Total (as CaCO ₃)	mg/l	44	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	37	250 max	APHA 22 nd Ed. 2012, 4500-CI-b, 4-72
11	Sulphate (as SO ₄)	mg/l	30.5	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190
12	Boron (as B)	mg/l	0.22	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
13	Magnesium (as Mg)	mg/l	6.1	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Continuation Sheet MEEPL/MAY/0447/2020-21

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-C.N.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.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Report No.: MEEPL/MAY/0448/2020-21	Date: 11 th May, 2020
Sample described by customer : DRINKING WATER	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER	
Marks on Sample: Location: Kujam - I Drinking Water	
Sample collected on: 18.04.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	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	0.2	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	139	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	27.7	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	32.9	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.1	250 max	APHA 22 nd Ed. 2012, 4500-CI-b, 4-72
13	Sulphate (as SO ₄)	mg/l	4.5	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

April 2020

Continuation Sheet

MEEPL/MAY/0448/2020-21

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.5	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
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	0.10	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	30	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.8	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-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.15	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	0.02	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	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-CNC & 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 : Kujam – I

Environmental Monitoring Report

April 2020

Continuation Sheet
MEEPL/MAY/0448/2020-21

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
Microbiological Analysis					
1.	Total Colliforms	MPN/100 mL	N.D	<1.1	APHA 22nd Ed. 2012, 9221-B & C, 9-66, 9-69
2.	E-Coli	MPN/100 mL	N.D	Absent	APHA 22nd Ed. 2012, 9221-B, C & G, 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	<0.01	0.02	US EPA 508-1995
11.	β-HCH	µg/L	N.D	0.03	US EPA 508-1995
12.	δ-HCH	µg/L	N.D	0.03	US EPA 508-1995
13.	Butachlor	µg/L	N.D	120	US EPA 508-1995
14.	Alachlor	µg/L	N.D	20	US EPA 508-1995
15.	Atrazine	µg/L	N.D	2.1	US EPA 532-2000
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	0.3	US EPA 508-1995
19.	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20.	Malathion	µg/L	N.D	185	US EPA 8141A -1994
21.	Methyl Parathion	µg/L	N.D	0.4	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	26	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 water is not contaminated.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

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KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

MAY 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0378/2020-21	Date: 17 th June, 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: Kujam Quarry 430	
Sample collected on: 18.05.2020	

LOCATION / IDENTIFICATION: Kujam Quarry 430				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	84.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38.6
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	4.2
06.	Ozone (O ₃)	µg/m ³	180	8.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.23
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	2.4
10.	Arsenic (As)	µg/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0379/2020-21	Date: 17 th June, 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: Talabkhanta 4A 13	
Sample collected on: 18.05.2020	

LOCATION / IDENTIFICATION: Talabkhanta 4A 13				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	80.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	36.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.5
05.	Ammonia (NH ₃)	µg/m ³	400	3.4
06.	Ozone (O ₃)	µg/m ³	180	8.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.23
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	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0380/2020-21	Date: 17 th June, 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: 4 A 11 Football Ground	
Sample collected on: 18.05.2020	

LOCATION / IDENTIFICATION: 4 A 11 Football Ground				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	69.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.4
05.	Ammonia (NH ₃)	µg/m ³	400	3.2
06.	Ozone (O ₃)	µg/m ³	180	9.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	2.1
10.	Arsenic (As)	µg/m ³	06	2.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries : Kujam – I

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0381/2020-21	Date: 17 th June, 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: Camp	
Sample collected on: 18.05.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	83.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.4
05.	Ammonia (NH ₃)	µg/m ³	400	3.4
06.	Ozone (O ₃)	µg/m ³	180	8.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.7
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.6

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0417/2020-21	Date: 17 th June, 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: 23.05.2020	

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	61.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	27.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.2
05.	Ammonia (NH ₃)	µg/m ³	400	2.6
06.	Ozone (O ₃)	µg/m ³	180	8.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	1.9
10.	Arsenic (As)	µg/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
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

MAY 2020

Report no: MEEPL/JUNE/0418/2020-21	Date: 17 th June, 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 Chathasari Village	
Sample collected on: 23.05.2020	

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	64.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.6
05.	Ammonia (NH ₃)	µg/m ³	400	2.6
06.	Ozone (O ₃)	µg/m ³	180	8.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	1.7
10.	Arsenic (As)	µg/m ³	06	1.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Gurdari

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0419/2020-21	Date: 17 th June, 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 Shakuapani Village</i>	
Sample collected on: 23.05.2020	

LOCATION / IDENTIFICATION: Near Shakuapani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	57.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.9
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	9.6
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	1.8
10.	Arsenic (As)	µg/m ³	06	2.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

MAY 2020

Report no: MEEPL/JUNE/0420/2020-21 Date: 17th June, 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: 23.05.2020

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	55.6
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	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.6
05.	Ammonia (NH ₃)	µg/m ³	400	4.3
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	0.03
09.	Nickel (Ni)	µg/m ³	20	1.6
10.	Arsenic (As)	µg/m ³	06	2.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

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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KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

JUNE 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Branch Office:

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CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0398/2020-21	Date: 20 th July, 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: Kujam Quarry 430	
Sample collected on: 17.06.2020	

LOCATION / IDENTIFICATION: Kujam Quarry 430				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	87.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	7.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.4
06.	Ozone (O ₃)	µg/m ³	180	10.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.24
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	2.4
10.	Arsenic (As)	µg/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.26

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0399/2020-21

Date: 20th July, 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: *Talabkhanta 4A 13*

Sample collected on: *17.06.2020*

LOCATION / IDENTIFICATION: Talabkhanta 4A 13

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	82.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.4
05.	Ammonia (NH ₃)	µg/m ³	400	4.3
06.	Ozone (O ₃)	µg/m ³	180	9.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	1.6
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0400/2020-21	Date: 20 th July, 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: 4 A 11 Football Ground	
Sample collected on: 17.06.2020	

LOCATION / IDENTIFICATION: 4 A 11 Football Ground				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	74.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.5
05.	Ammonia (NH ₃)	µg/m ³	400	3.8
06.	Ozone (O ₃)	µg/m ³	180	9.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	µg/m ³	20	1.6
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0401/2020-21	Date: 20 th July, 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: Camp	
Sample collected on: 17.06.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	80.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.8
05.	Ammonia (NH ₃)	µg/m ³	400	3.8
06.	Ozone (O ₃)	µg/m ³	180	9.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
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	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.2

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0447/2020-21	Date: 20 th July, 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: 20.06.2020	

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	57.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	24.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.9
05.	Ammonia (NH ₃)	µg/m ³	400	3.1
06.	Ozone (O ₃)	µg/m ³	180	8.1
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	1.3
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.2
12.	Benzo (a) Pyrene	µg/m ³	01	0.37

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0448/2020-21	Date: 20 th July, 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 Chathasari Village	
Sample collected on: 20.06.2020	

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	60.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	26.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.4
05.	Ammonia (NH ₃)	µg/m ³	400	1.9
06.	Ozone (O ₃)	µg/m ³	180	8.8
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	1.1
10.	Arsenic (As)	µg/m ³	06	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.33

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0449/2020-21	Date: 20 th July, 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 Shakhupani Village</i>	
Sample collected on: 22.06.2020	

LOCATION / IDENTIFICATION: Near Shakhupani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	54.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	21.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	1.9
06.	Ozone (O ₃)	µg/m ³	180	9.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
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	1.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JUNE 2020

Report no: MEEPL/JULY/0450/2020-21	Date: 20 th July, 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: 22.06.2020	

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	49.9
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	1.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.8
05.	Ammonia (NH ₃)	µg/m ³	400	1.3
06.	Ozone (O ₃)	µg/m ³	180	9.0
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	1.8
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	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Eco Ventures Pvt. Ltd.

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Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
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KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

JULY 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp
	RUNOFF WATER ANALYSIS
	DRINKING WATER ANALYSIS





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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0401/2020-21

Date: 10th August, 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: **Kujam Quarry 430**

Sample collected on: **18.07.2020**

LOCATION / IDENTIFICATION: Kujam Quarry 430

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	63.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	8.0
05.	Ammonia (NH ₃)	µg/m ³	400	4.2
06.	Ozone (O ₃)	µg/m ³	180	6.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.33
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	µg/m ³	20	1.9
10.	Arsenic (As)	µg/m ³	06	1.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0402/2020-21

Date: 10th August, 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: **Talabkhanta 4A 13**

Sample collected on: **18.07.2020**

LOCATION / IDENTIFICATION: Talabkhanta 4A 13

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	58.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	27.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.1
05.	Ammonia (NH ₃)	µg/m ³	400	3.3
06.	Ozone (O ₃)	µg/m ³	180	5.3
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	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0403/2020-21	Date: 10th August, 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: 4 A 11 Football Ground	
Sample collected on: 18.07.2020	

LOCATION / IDENTIFICATION: 4 A 11 Football Ground				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	52.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	21.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.1
05.	Ammonia (NH ₃)	µg/m ³	400	3.3
06.	Ozone (O ₃)	µg/m ³	180	4.9
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	1.6
10.	Arsenic (As)	µg/m ³	06	1.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0404/2020-21	Date: 10 th August, 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: Camp	
Sample collected on: 18.07.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	62.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	30.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.0
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	6.4
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	1.6
10.	Arsenic (As)	µg/m ³	06	1.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.35

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JULY 2020

Report no: MEEPL/AUG/0384/2020-21	Date: 10 th August, 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: 23.07.2020	

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	42.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	20.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.2
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	5.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	µg/m ³	20	1.9
10.	Arsenic (As)	µg/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JULY 2020

Report no: MEEPL/AUG/0385/2020-21	Date: 10 th August, 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 Chathasari Village	
Sample collected on: 23.07.2020	

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	46.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.1
05.	Ammonia (NH ₃)	µg/m ³	400	2.3
06.	Ozone (O ₃)	µg/m ³	180	5.8
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	1.4
10.	Arsenic (As)	µg/m ³	06	1.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

JULY 2020

Report no: MEEPL/AUG/0386/2020-21	Date: 10 th August, 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 Shakhupani Village</i>	
Sample collected on: 23.07.2020	

LOCATION / IDENTIFICATION: Near Shakhupani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	44.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	18.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.5
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	5.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.4
10.	Arsenic (As)	µg/m ³	06	0.97
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
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

JULY 2020

Report no: MEEPL/AUG/0387/2020-21	Date: 10 th August, 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: 23.07.2020	

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	40.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	16.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	1.6
06.	Ozone (O ₃)	µg/m ³	180	4.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.2
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	0.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0405/2020-21				Date: 10th August, 2020	
Sample described by customer: Runoff Water					
Client Name: Hindalco Industries Limited					
Client Address: Lohardaga					
Postal Code: 835203					
State: Jharkhand					
Country: India					
Sample Type: Runoff Water – Surface Water					
Marks on Sample: Location: Kujam – I Bauxite Mines					
Quantity: 4 liters.					
Sample collected on: 18.07.2020					
Sl. No.	Analysis	Method	Result	Unit	Limits
1.	pH	APHA 22 nd Ed. 2012, 4500-H+-B,4-92	8.0	mg/l	5.5-9.0
2.	Total Suspended Solids	APHA 22 nd EDN: 2012-2540	73	mg/l	100
3.	BOD @ 27°C	IS 3025 (Part 44): 1993, RA2003, Amd.1	5.9	mg/l	30
4.	COD	IS 3025 (Part 58): 1993, RA2006, Amd.1	33	mg/l	250
5.	Oil & Grease	IS 3025(PART 39): 1991 RA 2003,Ed 2.1	<5.0	mg/l	10
6.	Total Dissolved Solids	APHA 22 ND EDN 2012-2540	1591	mg/l	2100
7.	Aluminium (as Al)	APHA 22 nd EDN 2012-3120B	1.8	mg/l	3
8.	Calcium (as Ca)	APHA 22 nd EDN 2012-3120B	8.5	mg/l	75
9.	Iron (as Fe)	APHA 22 nd EDN 2012-3120B	0.97	mg/l	3
10.	Temperature		16.8	°C	Shall not exceed 5°C above the receiving water temperature

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0406/2020-21	Date: 10 th August, 2020
Sample described by customer : DRINKING WATER	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER	
Marks on Sample: Location: Kujam - I Drinking Water	
Sample collected on: 18.07.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	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	0.2	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-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	132	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	27.7	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	30.9	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.1	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
13	Sulphate (as SO ₄)	mg/l	4.0	200 max	APHA 22 nd Ed. 2012, 4500-so-4-e, 4-190





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Hindalco Industries: KUJAM -I

Environmental Monitoring Report

JULY 2020

Continuation Sheet MEEPL/AUG/0406/2020-21

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.3	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
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	0.10	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	30	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.8	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-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.15	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	0.02	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	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-CNC & 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: KUJAM -I

Environmental Monitoring Report

JULY 2020

Continuation Sheet
MEEPL/AUG/0406/2020-21

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
Microbiological Analysis					
1.	Total Colliforms	MPN/100 mL	N.D	<1.1	APHA 22nd Ed. 2012, 9221-B & C, 9-66, 9-69
2.	E-Coli	MPN/100 mL	N.D	Absent	APHA 22nd Ed. 2012, 9221-B, C & G, 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	<0.01	0.02	US EPA 508-1995
11.	β-HCH	µg/L	N.D	0.03	US EPA 508-1995
12.	δ-HCH	µg/L	N.D	0.03	US EPA 508-1995
13.	Butachlor	µg/L	N.D	120	US EPA 508-1995
14.	Alachlor	µg/L	N.D	20	US EPA 508-1995
15.	Atrazine	µg/L	N.D	2.1	US EPA 532-2000
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	0.3	US EPA 508-1995
19.	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20.	Malathion	µg/L	N.D	185	US EPA 8141A -1994
21.	Methyl Parathion	µg/L	N.D	0.4	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	26	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 water is not contaminated.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

AUGUST 2020

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

AUGUST 2020

CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0388/2020-21	Date: 15 th 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: Kujam Quarry 430	
Sample collected on: 20.08.2020	

LOCATION / IDENTIFICATION: Kujam Quarry 430				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	28.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	13.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.4
05.	Ammonia (NH ₃)	µg/m ³	400	4.7
06.	Ozone (O ₃)	µg/m ³	180	5.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.21
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	1.2
10.	Arsenic (As)	µg/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0389/2020-21

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: *Talabkhanta 4A 13*

Sample collected on: *20.08.2020*

LOCATION / IDENTIFICATION: Talabkhanta 4A 13

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	23.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	11.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.2
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	4.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	µg/m ³	20	1.4
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.21

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0390/2020-21	Date: 15 th 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: 4 A 11 Football Ground	
Sample collected on: 20.08.2020	

LOCATION / IDENTIFICATION: 4 A 11 Football Ground				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	17.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	7.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.2
05.	Ammonia (NH ₃)	µg/m ³	400	1.7
06.	Ozone (O ₃)	µg/m ³	180	1.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.15
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	µg/m ³	20	1.3
10.	Arsenic (As)	µg/m ³	06	0.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0391/2020-21	Date: 15 th 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: Camp	
Sample collected on: 20.08.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	14.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	5.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.2
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	4.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.21
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.5
10.	Arsenic (As)	µg/m ³	06	1.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.23

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0427/2020-21	Date: 15 th 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 Dipa Kujam Village	
Sample collected on: 24.08.2020	

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	21.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	11.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.1
05.	Ammonia (NH ₃)	µg/m ³	400	2.6
06.	Ozone (O ₃)	µg/m ³	180	4.8
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	1.4
10.	Arsenic (As)	µg/m ³	06	0.73
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.81
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0428/2020-21	Date: 15 th 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 Chathasari Village	
Sample collected on: 24.08.2020	

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	20.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	10.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.7
05.	Ammonia (NH ₃)	µg/m ³	400	1.5
06.	Ozone (O ₃)	µg/m ³	180	4.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.18
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	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0429/2020-21	Date: 15 th 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: <i>Near Shakuapani Village</i>	
Sample collected on: 24.08.2020	

LOCATION / IDENTIFICATION: Near Shakuapani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	24.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	8.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	1.6
06.	Ozone (O ₃)	µg/m ³	180	4.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.15
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	0.75
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.20

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Gurdari

Environmental Monitoring Report

AUGUST 2020

Report no: MEEPL/SEP/0430/2020-21	Date: 15 th 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: <i>Near Pakri Gada Village</i>	
Sample collected on: 24.08.2020	

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	22.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	10.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	5.5
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	1.1
10.	Arsenic (As)	µg/m ³	06	0.80
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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KUJAM – I BAUXITE MINE ENVIRONMENTAL MONITORING REPORT

SEPTEMBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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CONTENT

	LOCATION – KUJAM – I
	AMBIENT AIR QUALITY – CORE ZONE
1	Kujam Quarry 430
2	Talabkhanta 4A 13
3	4 A11 Football Ground
4	Camp





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Hindalco Industries : Kujam – I

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0428/2020-21	Date: 16th October, 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: Kujam Quarry 430	
Sample collected on: 17.09.2020	

LOCATION / IDENTIFICATION: Kujam Quarry 430				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	36.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	19.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.6
06.	Ozone (O ₃)	µg/m ³	180	7.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.14
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	µg/m ³	20	1.9
10.	Arsenic (As)	µg/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.21

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0429/2020-21

Date: 16th October, 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: *Talabkhanta 4A 13*

Sample collected on: *17.09.2020*

LOCATION / IDENTIFICATION: Talabkhanta 4A 13

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	28.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	16.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.3
05.	Ammonia (NH ₃)	µg/m ³	400	3.8
06.	Ozone (O ₃)	µg/m ³	180	7.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.14
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	µg/m ³	20	1.4
10.	Arsenic (As)	µg/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0430/2020-21

Date: 16th October, 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: **4 A 11 Football Ground**

Sample collected on: **17.09.2020**

LOCATION / IDENTIFICATION: 4 A 11 Football Ground

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	18.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	10.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.5
05.	Ammonia (NH ₃)	µg/m ³	400	3.7
06.	Ozone (O ₃)	µg/m ³	180	6.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.5
10.	Arsenic (As)	µg/m ³	06	1.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Kujam – I

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0431/2020-21	Date: 16 th October, 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: Camp	
Sample collected on: 17.09.2020	

LOCATION / IDENTIFICATION: Camp				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	15.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	9.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.8
05.	Ammonia (NH ₃)	µg/m ³	400	2.5
06.	Ozone (O ₃)	µg/m ³	180	6.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	µg/m ³	20	1.6
10.	Arsenic (As)	µg/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.13

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0457/2020-21	Date: 16th October, 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: 21.09.2020	

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	24.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	11.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.9
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	6.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.15
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	µg/m ³	20	1.1
10.	Arsenic (As)	µg/m ³	06	0.94
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0458/2020-21 Date: 16th October, 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 Chathasari Village**
Sample collected on: **21.09.2020**

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	17.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	8.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.5
06.	Ozone (O ₃)	µg/m ³	180	5.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.09
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	0.74
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries : Gurdari

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0459/2020-21	Date: 16 th October, 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 Shakhupani Village</i>	
Sample collected on: 21.09.2020	

LOCATION / IDENTIFICATION: Near Shakhupani Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	19.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	8.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.3
05.	Ammonia (NH ₃)	µg/m ³	400	4.1
06.	Ozone (O ₃)	µg/m ³	180	6.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.08
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	µg/m ³	20	1.1
10.	Arsenic (As)	µg/m ³	06	0.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Gurdari

Environmental Monitoring Report

SEPTEMBER 2020

Report No. : MEEPL/OCT/0460/2020-21	Date: 16 th October, 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: 21.09.2020	

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	22.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	10.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	6.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.11
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	1.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.12

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE



Annexure 1

Piezometer reading of Kujam I (80.87 ha) from Apr'20 to Sep'20		
S.No	Date	Height(m)
1	4/2/2020	48.41
2	4/30/2020	48.54
3	5/15/2020	48.89
4	5/23/2020	49
5	6/11/2020	48.87
6	6/23/2020	49.23
7	7/3/2020	48.5
8	7/24/2020	47.62
9	8/7/2020	47.3
10	8/25/2020	47.34
11	9/9/2020	47.63
12	9/25/2020	47.2

Annexure-2

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

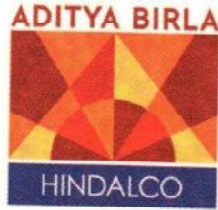
The composite cost during the year 2020-21 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (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 April'20 to September'20)
1	Pollution Control & Environment monitoring	38,21,524.00	23,85,921.05
2	Reclamation/ Back filing & Rehabilitation**	3,21,50,000.00	2,21,40,257.00
3	Green belt, Plantation & Water spraying arrangement	49,25,800.00	27,10,225.84
4	Rural Development	3,20,21,451.00	1,06,39,819.42

**Part of OB removed cost.



(Basudev Gangopadhyay)
Head (Geology & Environment)



Annexure 3

Date – 06.07.2020

Office Order

Environmental Cell has been re-constituted at Kujam I Bauxite Mine (Area 80.87 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. Shambhu Vashistha (Coordinator)
2. Mr. Kailash Prasad - Geologist
3. Mr. Suraj Ram (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.

A handwritten signature in blue ink, appearing to read "Basudev Gangopadhyay", is written over a faint circular stamp.

Basudev Gangopadhyay
Senior Executive (Quality & Environment)

Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April'20 to September'20								
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	65.21	280000	11.07.1981 to 31.03.2030	13267	0.073	0.11	10154.95
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	28869	0	0.52	16795.65
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	21915	0.70	1.28	19090.63
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	45243	0.953	1.92	38334.18
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	49710	0.947	1.00	60021.340
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	84400	5.08	3.59	198360.97
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	46854	2.08	1.76	180936.53
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	18420	0.27	0.22	7140.08

Annexure 4

11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	NIL	NIL	NIL	NIL
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	NIL	NIL	NIL	NIL
13	Pakhar (8.09)	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
14	Pakhar (35.12)	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
15	Pakhar (115.13)	115.13	300000	19.07.1996 to 31.03.2030	66500	0.50	0.66	84577.24
Minerals & Minerals Limited								
16	Pakhar (15.58)	15.58	60000	28.04.1965 to 31.03.2030	24600	0.30	0.12	29253.14
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	130500	1.37	0.37	120240.90
18	Bimarla Bauxite Mine	134.37	300000	18.07.2009 to 17.07.2059	46250	2.35	1.00	106168

*Static information about the mines included in the above table



Basudev Gangopadhyay
Head (Geology & Environment)