

HIL/LHD/ENV/MoEF/71

Date: 24.05.2021

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

Sub: Compliance Report of EC conditions for Serengdag Bauxite Mining (140.07 ha) project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period October'20 to March'21.

Ref: Environmental Clearance letter no J-11015/243/2005-IA II (M) dated 23th June 2006

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Serengdag (140.07 Ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period October'20 to March'21. The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
140.07	100000	04.10.1978 to 31.03.2030

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 : Serengdag Bauxite Mine (140.07 ha)
M/s Hindalco Industries Limited

Environment Clearance No. & date : J-11015/243/2005-IA.II(M), dated 23.06.2006

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

S No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by the State Pollution Control Board in their consent to establish should be effectively implemented.	Implementations of the stipulated conditions in consent to establish are fulfilled post which consent to operate has been obtained from time to time. Existing consent to operate is valid upto 31.03.2025. Implementations of the stipulated conditions mentioned in consent to operate are being complied with.
2	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Land acquisition is being done with permission of competent authority of State Government i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement is being done with raiyat (Land Owner) for 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.
3	Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 62.18 ha forestland shall be obtained before starting mining operation in that area	Mining is never carried out in forest land. Winning of bauxite during above period was not carried out. The forest land has been surrendered by the company. The necessary formality is under process at forest department for same.
4	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Top soil being spread over the backfilled area adequately for reclamation and rehabilitation of mined out areas as applicable when mine was operational. Winning of bauxite during above period was not carried out.
5	The waste generated in the initial period shall be dumped temporarily and backfilled in the mined out area. There shall be no permanent external OB	Waste/OB generated is used in backfilling, data enclosed.

	<p>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>There is no external dump as on date. Concurrent backfilling was under progress.</p> <p>Monitoring and management of rehabilitated areas continuing with regular supervision.</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 de-silted 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> <p>No external dump in project area as on date.</p>
7	<p>Plantation shall be raised in an area of 37.1 ha including a green belt of adequate width by planting the native species around the ML area, roads, 06 dump sites etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1500 plants per ha.</p>	<p>During year 2020-21, around 1200 saplings have planted in this mine. Total 3.44 ha areas has been planted till date. In addition to this agricultural activity is going on reclaimed land. Rest to be complied during project period.</p>
8	<p>The mining operations shall not intersect groundwater table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.</p>	<p>No natural watercourse and/or water resource has been obstructed due to any mining operations.</p> <p>In future also, working zone will be restricted to above ground water table.</p> <p>We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.</p>
9	<p>The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p>As of now, to augment the ground water resources, measures like sump, no use of ground water for mining activities, no discharge of mine water outside mining lease area, systematic backfilling etc. being practiced.</p> <p>It may be noted that there is no chance to intersect ground water table during mining</p>

		operation.
10	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.	<p>The mining operation is not intersecting ground water table. We are not using ground water for any mining purpose.</p> <p>Piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as Annexure 1.</p>
11	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	<p>Water is collected from rainwater harvesting pond of Serengdag plateau.</p> <p>We are not using natural water bodies, ground water for mining purposes.</p> <p>There is no chance to intersect ground water table during mining operation as total mining depth is around 20m (maximum) which is much above the ground water table.</p>
12	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.
13	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.	<p>To keep vehicular emissions in control, company vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission.</p> <p>Winning of bauxite during above period was not carried out.</p>
14	The higher benches of the excavated void to be converted into water reservoir shall be terraced and afforested to stabilize the slopes. Peripheral fencing shall be done along the excavated area.	<p>This work is in progress with the progress of mining activity.</p> <p>Mined out pit will be converted into water reservoir, plantation will be carried out to stabilize the slopes and get them terraced.</p>
15	Drills should either be operated with dust extractors or should be equipped with water injection system	Wet drilling is in practice. Winning of bauxite during above period was not carried out.

16	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 boulders should be implemented	Blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. Efforts and mitigative measures are being taken to mitigate impact of blasting.
17	Consent to operate should be obtained from SPCB prior to start of production of mine	Existing consent to operate is valid upto 31.03.2025.
18	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	There is no residential accommodation in the mine area hence STP is not required. Effluent treatment mechanism (Oil-grease trap) are installed at suitable site in Sherengdag plateau.
19	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna spotted in the study area. Action plan for conservation of endangered flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	Following precautionary measures are being undertaken for conservation of flora and fauna. Suitable conservation measures to protect endangered flora & fauna implemented as under 1. Permanent pillars are established within the mine lease area. 2. Maintenance of the forest road being done 3. Ensured necessary air and noise pollution control measures. 4. Regular water sprinkling is being carried out on the forest road 5. Transportation done only in day time 6. Patrolling is being done.
20	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 prepared & 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 the present resource estimate, and peak rated production capacity mentioned in EC, the tentative balance life is around 21 years (Life is 8 years with surrender of forest land). However, based on further availability of geological data with progress of mining in future, resources estimate vis-à-vis EC capacity and cut-off grade at that point of time ,balance life of the mine may change based on final resource estimate,

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	Noted. Report is attached as Annexure 4.
3	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.
4	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 is being done. AAQ monitoring report is attached as Annexure -1.
5	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.	One mobile water tanker with sprinkling facility has been provided along haul roads, loading unloading & at transfer points to arrest dust emissions. Winning of bauxite during above period was not carried out.
6	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.	Noise monitoring is done regularly. Workers engaged in operation of HEMM, etc. are provided with ear plugs / muffs. Monitoring report is enclosed as Annexure 1. Winning of bauxite during above period was not carried out.

7	Industrial wastewater (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 generated from workshop within mine lease area. We are not discharging any wastewater outside mine lease area. Oil and grease has been installed at Sherengdag plateau at suitable site.
8	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.	<p>Complied.</p> <p>Personal Protective Equipment is provided & used by the individuals during the mining activities. We have a well-equipped hospital at mine site where health checkup of workmen is carried out regularly.</p> <p>Training on safety, health & environmental aspects of mining is being regularly imparted through VT training & other training programmes.</p> <p>Winning of bauxite during above period was not carried out.</p>
9	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 management cell is functioning with qualified in-house members. Copy is enclosed as Annexure – 3.
10	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.	Provisions related to financial closure is not applicable as this is an operating mine. Currently, the Regional Office is located at Ranchi
11	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.	Statement of actual expenses for environmental protection measure is attached as Annexure- 2. Currently, the Regional Office is located at Ranchi
12	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 sl. No. 10. Currently, the Regional Office is located at Ranchi
13	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. Currently, the Regional Office is located at Ranchi

14	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
15	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.
16	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

SERENDAG BAUXITE MINE (140.07 HA)
M/S HINDALCO INDUSTRIES LTD



(Plantation over reclaimed area)



(Plantation over reclaimed area)

SERENDAG BAUXITE MINE (140.07 HA)
M/S HINDALCO INDUSTRIES LTD



(Washing Ramp and Oil and grease trap)



(Washing platform and oil & grease trap)



Eco Ventures Pvt. Ltd.

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Mahabal Enviro Engineers Pvt. Ltd.

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

SHERENG DAG B BAUXITE MINE- ENVIRONMENTAL MONITORING REPORT

OCTOBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

CONTENT

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	AMBIENT AIR QUALITY – CORE ZONE
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4	Harup Block C (Proposed)
	AMBIENT NOISE
	SPOT NOISE
	SPRING WATER QUALITY
	DRINKING WATER ANALYSIS





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0495/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Mine Pit Quarry No. 2B</i>	
Sample collected on: 13.10.2020	

LOCATION / IDENTIFICATION: <i>Mine Pit Quarry No. 2B</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	81
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	48
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.4
06.	Ozone (O ₃)	µg/m ³	180	10.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.18
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	3.3
10.	Arsenic (As)	ng/m ³	06	2.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0496/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Near Baisbhatan Village</i>	
Sample collected on: 13.10.2020	

LOCATION / IDENTIFICATION: *Near Baisbhatan Village*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	87
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	45
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.0
05.	Ammonia (NH ₃)	µg/m ³	400	5.5
06.	Ozone (O ₃)	µg/m ³	180	10.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.21
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.5
10.	Arsenic (As)	ng/m ³	06	3.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.2

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0497/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Block 2A (Prohopat Village)</i>	
Sample collected on: 13.10.2020	

LOCATION / IDENTIFICATION: <i>Block 2A (Prohopat Village)</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	70
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.1
05.	Ammonia (NH ₃)	µg/m ³	400	5.0
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.26
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	2.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.2

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0498/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Harup Block C (Proposed)</i>	
Sample collected on: 13.10.2020	

LOCATION / IDENTIFICATION: *Harup Block (Proposed)*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	55
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.3
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	9.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.23
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	2.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.2
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0499/2020-21	Date: 30 th November, 2020
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 13.10.2020	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Sherengdag B Mines Pit	dB (A) Leq	75	66.7	70	58.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0500/2020-21	Date: 30 th November, 2020
Sample described by customer : Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 13.10.2020	

Location/Identification	Unit	Limit (day)	Result
Sherengdag – B Bauxite Mines Near Poclairn	dB (A) L_{eq}	75	70.8

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0501/2020-21	Date: 30 th November, 2020
Sample described by customer : SPRING WATER	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: SPRING WATER	
Marks on Sample: Location: Serengdag – B Bauxite Mines	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on: 13.10.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
1	Colour	Hazen	<2	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.31	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	6.9	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	407	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	35	200 max	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
9	Alkalinity Total (as CaCO ₃)	mg/l	41	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	31	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
11	Sulphate (as SO ₄)	mg/l	28.9	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190
12	Boron (as B)	mg/l	0.21	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
13	Magnesium (as Mg)	mg/l	6.5	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet
MEEPL/NOV/0501/2020-21

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

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

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0502/2020-21	Date: 11 th May, 2020
Sample described by customer : DRINKING WATER-POTABILITY	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Marks on Sample: Location: Sherengdag – B – Drinking Water	
Sample collected on: 13.10.2020	

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	--	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	171	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	34.1	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	31.8	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	4.8	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet MEEPL/NOV/0502/2020-21

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	0.14	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.10	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	28	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-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S ₂ -C 4-175 & F 4-178





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

OCTOBER 2020

Continuation Sheet
MEEPL/NOV/0502/2020-21

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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Hindalco Industries : Serengdag A

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0483/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Banjari Village	
Sample collected on: 12.10.2020	

LOCATION / IDENTIFICATION: Near Banjari Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.2
05.	Ammonia (NH ₃)	µg/m ³	400	4.8
06.	Ozone (O ₃)	µg/m ³	180	9.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.5
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.2

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0484/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Harup Village	
Sample collected on: 12.10.2020	

LOCATION / IDENTIFICATION: Near Harup Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	59
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	26
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.1
06.	Ozone (O ₃)	µg/m ³	180	9.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.24
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	2.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0485/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Pauri Village	
Sample collected on: 12.10.2020	

LOCATION / IDENTIFICATION: Near Pauri Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	71
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.1
05.	Ammonia (NH ₃)	µg/m ³	400	4.8
06.	Ozone (O ₃)	µg/m ³	180	8.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.2
10.	Arsenic (As)	ng/m ³	06	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

OCTOBER 2020

Report No.: MEEPL/NOV/0486/2020-21	Date: 30 th November, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Paintoli Village	
Sample collected on: 12.10.2020	

LOCATION / IDENTIFICATION: Near Paintoli Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	68
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.3
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	8.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Mahabal Enviro Engineers Pvt. Ltd.

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District – Ranchi 834009

SHERENG DAG B BAUXITE MINE- ENVIRONMENTAL MONITORING REPORT

NOVEMBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

NOVEMBER 2020

CONTENT

	LOCATION – SHRENGDAG B BAUXITE MINE
	AMBIENT AIR QUALITY – CORE ZONE
1	Mine Pit Quarry No. 2B
2	Near Baisbhatan Village
3	Block 2A (Prohopat Village)
4	Harup Block C (Proposed)





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0450/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Mine Pit Quarry No. 2B</i>	
Sample collected on: 13.11.2020	

LOCATION / IDENTIFICATION: <i>Mine Pit Quarry No. 2B</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	78.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	39.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.8
05.	Ammonia (NH ₃)	µg/m ³	400	6.7
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.3
10.	Arsenic (As)	ng/m ³	06	1.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.91
12.	Benzo (a) Pyrene	µg/m ³	01	0.17

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0451/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Near Baisbhatan Village</i>	
Sample collected on: 13.11.2020	

LOCATION / IDENTIFICATION: *Near Baisbhatan Village*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	39.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.8
05.	Ammonia (NH ₃)	µg/m ³	400	6.7
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.33
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.3
10.	Arsenic (As)	ng/m ³	06	1.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.82
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0452/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Block 2A (Prohopat Village)</i>	
Sample collected on: 13.11.2020	

LOCATION / IDENTIFICATION: <i>Block 2A (Prohopat Village)</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	59.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.1
05.	Ammonia (NH ₃)	µg/m ³	400	5.9
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.72
12.	Benzo (a) Pyrene	µg/m ³	01	0.07

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0453/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Harup Block C (Proposed)</i>	
Sample collected on: 13.11.2020	

LOCATION / IDENTIFICATION: *Harup Block (Proposed)*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	53.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	26.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.0
05.	Ammonia (NH ₃)	µg/m ³	400	5.3
06.	Ozone (O ₃)	µg/m ³	180	5.0
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.2
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.78
12.	Benzo (a) Pyrene	µg/m ³	01	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag A

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0446/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Banjari Village	
Sample collected on: 12.11.2020	

LOCATION / IDENTIFICATION: Near Banjari Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	69.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.4
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	0.23
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.3
10.	Arsenic (As)	ng/m ³	06	1.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.70
12.	Benzo (a) Pyrene	µg/m ³	01	0.13

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Shrengdag A

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0447/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Pauri Village	
Sample collected on: 12.11.2020	

LOCATION / IDENTIFICATION: Near Pauri Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	50.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
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	5.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	ng/m ³	20	1.2
10.	Arsenic (As)	ng/m ³	06	1.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.87
12.	Benzo (a) Pyrene	µg/m ³	01	0.19

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag A

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0448/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Paintoli Village	
Sample collected on: 12.11.2020	

LOCATION / IDENTIFICATION: Near Paintoli Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	66.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	36.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	7.3
06.	Ozone (O ₃)	µg/m ³	180	7.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.0
10.	Arsenic (As)	ng/m ³	06	1.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.91
12.	Benzo (a) Pyrene	µg/m ³	01	0.20

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag A

Environmental Monitoring Report

NOVEMBER 2020

Report no: MEEPL/DEC/0449/2020-21	Date: 28 th December, 2020
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Harup Village	
Sample collected on: 12.11.2020	

LOCATION / IDENTIFICATION: Near Harup Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	44.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	25.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.0
06.	Ozone (O ₃)	µg/m ³	180	6.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.19
08.	Lead (Pb)	µg/m ³	1.0	0.07
09.	Nickel (Ni)	ng/m ³	20	0.95
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.70
12.	Benzo (a) Pyrene	µg/m ³	01	0.13

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, 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.

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SHERENG DAG B BAUXITE MINE- ENVIRONMENTAL MONITORING REPORT

DECEMBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Serengdag B

Environmental Monitoring Report

DECEMBER 2020

CONTENT

	LOCATION – SERENDAG B BAUXITE MINE
	AMBIENT AIR QUALITY – CORE ZONE
1	Mine Pit Quarry No. 2B
2	Near Baisbhatan Village
3	Block 2A (Prohopat Village)
4	Harup Block C (Proposed)





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Hindalco Industries : Serengdag B

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0350/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mine Pit Quarry No. 2B*

Sample collected on: 11.12.2020

LOCATION / IDENTIFICATION: *Mine Pit Quarry No. 2B*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	88.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	45.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.7
05.	Ammonia (NH ₃)	µg/m ³	400	5.3
06.	Ozone (O ₃)	µg/m ³	180	6.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag B

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0351/2020-21	Date: 25 th January, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Near Baisbhatan Village</i>	
Sample collected on: 11.12.2020	

LOCATION / IDENTIFICATION: <i>Near Baisbhatan Village</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	67.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.1
05.	Ammonia (NH ₃)	µg/m ³	400	5.5
06.	Ozone (O ₃)	µg/m ³	180	7.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.08
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/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	0.21

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag B

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0352/2020-21	Date: 25 th January, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Block 2A (Prohopat Village)</i>	
Sample collected on: 11.12.2020	

LOCATION / IDENTIFICATION: <i>Block 2A (Prohopat Village)</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	72.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.7
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	7.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.20
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/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	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag B

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0353/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Harup Block C (Proposed)*

Sample collected on: 11.12.2020

LOCATION / IDENTIFICATION: *Harup Block (Proposed)*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	54.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	31.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.1
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	7.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/m ³	06	1.3
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 : Serengdag A

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0346/2020-21	Date: 25 th January, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Banjari Village	
Sample collected on: 10.12.2020	

LOCATION / IDENTIFICATION: Near Banjari Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	67.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	30.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.6
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	11.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.0
10.	Arsenic (As)	ng/m ³	06	1.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.12

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0347/2020-21

Date: 25th January, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: Near Pauri Village

Sample collected on: 10.12.2020

LOCATION / IDENTIFICATION: Near Pauri Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	47.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.2
05.	Ammonia (NH ₃)	µg/m ³	400	2.7
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	0.03
09.	Nickel (Ni)	ng/m ³	20	1.1
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.12

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0348/2020-21	Date: 25 th January, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Paintoli Village	
Sample collected on: 10.12.2020	

LOCATION / IDENTIFICATION: Near Paintoli Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	51.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	26.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.1
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	9.0
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.4
10.	Arsenic (As)	ng/m ³	06	2.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.19

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

DECEMBER 2020

Report No. : MEEPL/JAN/0349/2020-21	Date: 25 th January, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Harup Village	
Sample collected on: 10.12.2020	

LOCATION / IDENTIFICATION: Near Harup Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	63.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	29.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.2
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	9.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.30
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.4
10.	Arsenic (As)	ng/m ³	06	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.2
12.	Benzo (a) Pyrene	µg/m ³	01	0.17

For Mahabal Enviro Engineers Pvt. Ltd.

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SHERENG DAG B BAUXITE MINE- ENVIRONMENTAL MONITORING REPORT

JANUARY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

CONTENT

LOCATION – SHRENGDAG B BAUXITE MINE	
	AMBIENT AIR QUALITY – CORE ZONE
1	Mine Pit Quarry No. 2B
2	Near Baisbhatan Village
3	Block 2A (Prohopat Village)
4	Harup Block C (Proposed)
	DRINKING WATER ANALYSIS





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Report No.: MEEPL/FEB/0356/2020-21	Date: 10 th February, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Mine Pit Quarry No. 2B</i>	
Sample collected on: 13.01.2021	

LOCATION / IDENTIFICATION: <i>Mine Pit Quarry No. 2B</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	85
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	52
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	5.7
06.	Ozone (O ₃)	µg/m ³	180	10.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	3.0
10.	Arsenic (As)	ng/m ³	06	2.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Report No.: MEEPL/FEB/0357/2020-21	Date: 10 th February, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Near Baisbhatan Village</i>	
Sample collected on: 13.01.2021	

LOCATION / IDENTIFICATION: *Near Baisbhatan Village*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	90
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	55
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.7
05.	Ammonia (NH ₃)	µg/m ³	400	5.9
06.	Ozone (O ₃)	µg/m ³	180	10.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.28
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.5
10.	Arsenic (As)	ng/m ³	06	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Report No.: MEEPL/FEB/0358/2020-21	Date: 10 th February, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Block 2A (Prohopat Village)</i>	
Sample collected on: 13.01.2021	

LOCATION / IDENTIFICATION: <i>Block 2A (Prohopat Village)</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	77
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	45
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.3
05.	Ammonia (NH ₃)	µg/m ³	400	5.7
06.	Ozone (O ₃)	µg/m ³	180	7.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	2.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Report No.: MEEPL/FEB/0359/2020-21	Date: 10 th February, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Harup Block C (Proposed)</i>	
Sample collected on: 13.01.2021	

LOCATION / IDENTIFICATION: *Harup Block (Proposed)*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.7
06.	Ozone (O ₃)	µg/m ³	180	9.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.26
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/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	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Report No.: MEEPL/FEB/0360/2020-21	Date: 10 th February, 2021
Sample described by customer : DRINKING WATER-POTABILITY	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Marks on Sample: Location: Sherengdag – B – Drinking Water	
Sample collected on: 13.01.2021	

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	--	7.0	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	284	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	36.3	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	31.5	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.4	250 max	APHA 22 nd Ed. 2012, 4500-Cl-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 : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Continuation Sheet MEEPL/FEB/0360/2020-21

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	0.14	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.09	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	25	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.7	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-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S ₂ -C 4-175 & F 4-178





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Hindalco Industries : Shrengdag B

Environmental Monitoring Report

JANUARY 2021

Continuation Sheet
MEEPL/FEB/0360/2020-21

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.

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SHERENG DAG B BAUXITE MINE- ENVIRONMENTAL MONITORING REPORT

FEBRUARY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag B

Environmental Monitoring Report

FEBRUARY 2021

CONTENT

	LOCATION – SERENDAG B BAUXITE MINE
	AMBIENT AIR QUALITY – CORE ZONE
1	Mine Pit Quarry No. 2B
2	Near Baisbhatan Village
3	Block 2A (Prohopat Village)
4	Harup Block C (Proposed)





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Mobile No: +91 9431.102.102 / +91 9955.358.262,

E-mail: mahabalanranchi@gmail.com

Hindalco Industries : Serengdag B

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0400/2020-21

Date: 25th March, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Mine Pit Quarry No. 2B*

Sample collected on: 12.02.2021

LOCATION / IDENTIFICATION: *Mine Pit Quarry No. 2B*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	91
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	50
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	7.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.9
05.	Ammonia (NH ₃)	µg/m ³	400	8.2
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

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 : Serengdag B

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0401/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Near Baisbhatan Village</i>	
Sample collected on: 12.02.2021	

LOCATION / IDENTIFICATION: *Near Baisbhatan Village*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	73
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	39
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.1
05.	Ammonia (NH ₃)	µg/m ³	400	5.9
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.17
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.3
10.	Arsenic (As)	ng/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	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag B

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0402/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: <i>Block 2A (Prohopat Village)</i>	
Sample collected on: 12.02.2021	

LOCATION / IDENTIFICATION: <i>Block 2A (Prohopat Village)</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	77
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.2
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	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.20
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/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	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Serengdag B

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0403/2020-21

Date: 25th March, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: *Harup Block C (Proposed)*

Sample collected on: 12.02.2021

LOCATION / IDENTIFICATION: *Harup Block (Proposed)*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	60
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.7
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	7.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/m ³	06	1.3
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.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries : Serengdag A

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0396/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Banjari Village	
Sample collected on: 11.02.2021	

LOCATION / IDENTIFICATION: Near Banjari Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	61
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.2
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	9.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.0
10.	Arsenic (As)	ng/m ³	06	1.2
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

SENIOR EXECUTIVE





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Hindalco Industries : Serengdag A

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0397/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Pauri Village	
Sample collected on: 11.02.2021	

LOCATION / IDENTIFICATION: Near Pauri 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	32
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.7
05.	Ammonia (NH ₃)	µg/m ³	400	2.7
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	0.03
09.	Nickel (Ni)	ng/m ³	20	1.1
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.17

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0398/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Paintoli Village	
Sample collected on: 11.02.2021	

LOCATION / IDENTIFICATION: Near Paintoli Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	58
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.1
06.	Ozone (O ₃)	µg/m ³	180	8.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.4
10.	Arsenic (As)	ng/m ³	06	2.2
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.21

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Serengdag A

Environmental Monitoring Report

FEBRUARY 2021

Report No. : MEEPL/MAR/0399/2020-21	Date: 25 th March, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Harup Village	
Sample collected on: 11.02.2021	

LOCATION / IDENTIFICATION: Near Harup Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	65
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	39
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.0
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	9.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.30
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.4
10.	Arsenic (As)	ng/m ³	06	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.2
12.	Benzo (a) Pyrene	µg/m ³	01	0.17

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





GEMS PROJECTS PVT.LTD.

(ENVIRONMENTAL LABORATORY DIVISION)
APPROVED BY JHARKHAND STATE POLLUTION CONTROL BOARD, GOVT OF JHARKHAND

TEST REPORT

Sample Description	Ambient Air Quality	Sampling Details	
Job Registration ID	G/JRN/210319/AR-03	Sampling Date	17th-18th Mar.2021
ULR Number	Sample collected by	Mukesh & Team
Report Release Date	22-03-2021	Sample Code	IS 5182 Part(2,6 & 23)
Issue to:		Industry Type	Bauxite Mine
M/s Serangdag Bauxite Mines(140.07 Hect.),HIL		Company Status	Operating
At- Hindalco Ind. Ltd		Metrological Information	
Dist- Gumla(Jharkhand)		Average Temperature(°C)	38
		Weather Condition	Clear
		Relative Humidity %	76

Test Method	IS 5182 (part-2)	IS 5182 (part-6)	IS 5182 (part-23)	CPCB (Gravimetric)
-------------	------------------	-------------------	--------------------	--------------------

Time	SO ₂ µg/m ³	Nox µg/m ³	PM ₁₀ µg/m ³	P.M 2.5 µg/m ³
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Sampling Location 1	Mine Pit Quarry No. 2B			
2:00 PM 06:00 PM	18	26		
06:00 PM 10:00 PM	21	28	78.69	
10:00 PM 02:00 AM	20	31		
02:00 AM 06:00 AM	19	29	60.47	
06:00 AM 10:00 AM	16	22		
10:00 AM 02:00 PM	14	20	89.31	42.37
Maximum	21	31	89.31	42.37
Average	18	26	76.16	42.37

Sampling Location 2	Near Baisbhatan Village			
2:15 PM 06:15 PM	15	34		
06:15 PM 10:15 PM	17	31	83.64	
10:15 PM 02:15 AM	18	30		
02:15 AM 06:15 AM	16	28	63.24	
06:15 AM 10:15 AM	14	23		
10:15 AM 02:15 PM	12	21	90.16	50.63
Maximum	18	34	90.16	50.63
Average	15	28	79.01	50.63

Sampling Location 3	Block 2A (Prohopat Village)			
2:30 PM 06:30 PM	17	25		
06:30 PM 10:30 PM	20	32	81.78	
10:30 PM 02:30 AM	18	31		
02:30 AM 06:30 AM	17	29	61.87	
06:30 AM 10:30 AM	15	24		
10:30 AM 02:30 PM	13	22	94.79	48.67
Maximum	20	32	94.79	48.67
Average	17	27	79.48	48.67

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

- Remarks
- 1) Test values are found Within the prescribed limit of NAAQ 2009.
 - 2) The Test Report is in accordance with sample received and the test parameters.
 - 3) Any dispute is subject to Ranchi Jurisdiction Only.
 - 4) The Test report shall not be reproduced partially or whole for advertising or Legal entity.
 - 5) The Test report shall not be reproduced, without the written approval of laboratoty In-charge.

Aril Barjo
22/3/2021
Tested By
(Analyst)



Rohit Kumar Deep
22/03/2021
Checked by
(Section In-charge)

Sanjeev Kumar Singh
22/03/2021
Issued By
Lab In-Charge

Gems Projects Pvt. Ltd

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GEMS PROJECTS PVT.LTD.

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APPROVED BY JHARKHAND STATE POLLUTION CONTROL BOARD, GOVT OF JHARKHAND

TEST REPORT

Sample Description	Ambient Air Quality	Sampling Details	
Job Registration ID	G/JRN/210319/AR-03	Sampling Date	17th-18th Mar.2021
ULR Number	Sample collected by	Mukesh & Team
Report Release Date	22-03-2021	Sample Code	IS 5182 Part(2,6 & 23)
Issue to:		Industry Type	Bauxite Mine
M/s Serangdag Bauxite Mines(140.07 Hect.),HIL		Company Status	Operating
At- Hindalco Ind. Ltd		Metrological Information	
Dist- Gumla(Jharkhand)		Average Temperature(°C)	38
		Weather Condition	Clear
		Relative Humidity %	76

Test Method	IS 5182 (part-2)	IS 5182 (part-6)	IS 5182 (part-23)	CPCB (Gravimetric)
Time	SO ₂ µg/m ³	Nox µg/m ³	PM ₁₀ µg/m ³	P.M 2.5 µg/m ³
Sampling Location 1	Harup Block C(Proposed)			
2:45 PM 06:45 PM	14	27		
06:45 PM 10:45 PM	16	29	80.58	
10:45 PM 02:45 AM	18	32		
02:45 AM 06:45 AM	20	34	59.45	
06:45 AM 10:45 AM	19	30		
10:45 AM 02:45 PM	17	28	91.41	54.98
Maximum	20	34	91.41	54.98
Average	17	30	77.15	54.98

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

- Remarks
- 1) Test values are found Within the prescribed limit of NAAQ 2009.
 - 2) The Test Report is in accordance with sample received and the test parameters.
 - 3) Any dispute is subject to Ranchi Jurisdiction Only.
 - 4) The Test report shall not be reproduced partially or whole for advertising or Legal entity.
 - 5) The Test report shall not be reproduced , without the written approval of laboratoty In-charge.

Aril Barjo
22/3/2021

Aril Barjo
Tested By
(Analyst)



Rohit Kumar Deep
22/03/2021

Rohit Kumar Deep
Checked by
(Section In-charge)

Sanjeev Kumar Singh
22/03/2021

Sanjeev Kumar Singh
Issued By
Lab In Charge
Gems Projects Pvt. Ltd



GEMS PROJECTS PVT.LTD.

(ENVIRONMENTAL LABORATORY DIVISION)

APPROVED BY JHARKHAND STATE POLLUTION CONTROL BOARD, GOVT OF JHARKHAND

TEST REPORT

Sample Description	Ambient Air Quality	Sampling Details	
Job Registration ID	G/JRN/210319/AR-03	Sampling Date	17th-18th Mar.2021
ULR Number	Sample collected by	Mukesh & Team
Report Release Date	22-03-2021	Sampling Protocol	CPCB & Indophenol Method
Issue to:		Industry Type	Bauxite Mine
M/s Serangdag Bauxite Mines(140.07 Hect.),HIL At- Hindalco Ind. Ltd Dist- Gumla(Jharkhand)		Company Status	Operating
Metrological Information			
		Average Temperature(°C)	38
		Weather Condition	Clear
		Relative Humidity %	76

Parameters	Test Method	Unit	Sampling Location				NAAQS (2009)
			Mine Pit Quarry No. 2B	Near Baisbhatan Village	Block 2A (Prohopat Village)	Harup Block C(Proposed)	
Ozone(O ³)	CPCB guideline	µg/m ³	9.2	7.0	8.4	6.8	180 µg/m ³
Carbon Monoxide (CO)	CPCB (Non Dispersive Infrared Method)	mg/m ³	0.27	0.07	0.24	0.20	2 mg/m ³
Ammonia (NH ³)	Indophenol Method	µg/m ³	4.6	6.2	4.1	3.8	400 µg/m ³

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

- Remarks:
- 1) Test values are found Within the prescribed limit of NAAQ 2009.
 - 2) The Test Report is in accordance with sample received and the test parameters.
 - 3) Any dispute is subject to Ranchi Jurisdiction Only.
 - 4) The Test report shall not be reproduced partially or whole for advertising or Legal entity.
 - 5) The Test report shall not be reproduced , without the written approval of laboratory In-charge.

Aril Barjo
22/3/2021

Aril Barjo
Tested By
Analyst



Rohit Kumar Deep
22/03/2021
Rohit Kumar Deep
Checked by
(Section In-charge)

Sanjeev Kumar Singh
22/03/2021

Sanjeev Kumar Singh
Issued By
(Lab In-Charge)

Lab In-Charge
Page 3 of 3
Gems Projects Pvt. Ltd

Annexure 1

Piezometer reading - Serengdag 140.07 ha

S No	Month	Depth (meter)
1	October'20	36.42
2	November'20	36.56
3	December'20	36.65
4	January'21	36.66
5	February'21	36.68
6	March'21	35.88

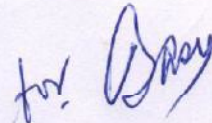
Annexure-2

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

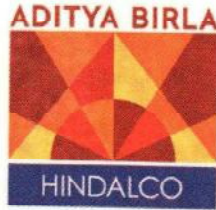
The composite cost during the year 2020-21 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar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

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

**Part of OB removed cost.

for 

(Basudev Gangopadhyay)
Head (Geology & Environment)



Annexure 3

Date – 06.07.2020

Office Order

Environmental Cell has been re-constituted at Serengdag Bauxite Mine (Area 140.07 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. Pradeep Kumar (Coordinator)
2. Mr. Mangal Hansda (Member)
3. Mr. Navnit Kumar Jaiswal (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 horizontal line.

Basudev Gangopadhyay
Senior Executive (Quality & Environment)

Annexure 4


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

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Annexure 4

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

*Static information about the mines included in the above table


Basudev Gangopadhyay
 Head (Geology & Environment)