

Ref No: HIL/LHD/GM (GEO)/MoEF/ 69

Date: 27.05.2019

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 Shrengdag (155.81 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Gumla, Jharkhand for the period October'18 to March'19.

Ref: Environmental Clearance letter no J-11015/125/2006-IA II(M) dated 13th April 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Shrengdag (155.81 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period October'18 to March'19.

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)
GM (Geology & Environment)

Enclosure: - As Above

Copy to: Member Secretary, JSPCB, Ranchi
RO, JSPCB, Ranchi
CPCB, Zonal Office, Kolkata
<mef@ori.nic.in>, <mef@nic.in>, <mef.or@nic.in>, mef.or@nic.in

Compliance of conditions laid down in Environmental Clearance

SHRENDAG BAUXITE MINES (155.81 Ha)

Period: October'18-March'19

J-11015/125/2006-IA.II (M) Dated 13.4.2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Implementations of the stipulated conditions in NOC are fulfilled post which consent to operate has been obtained from time to time. The existing consent to operate is valid upto 31.12.2020. Productions of bauxite are within limits specified in consent to operate.
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.	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 as per the norms set by D.C. .The compensation and facilities are being provided as per norms set in agreement. Thus the provision is taken care off.
3	The exploration shall be completed within 2.5 years and thereafter the proponent shall come up with a firm proposal for mining, based on the estimated reserves. The reclamation plan, post mine land use and progressive greenbelt development plan shall also be prepared and submitted with the revised proposal.	Required exploration is already done. Mining plan/ Mining Scheme based on current reserves/resource estimate is duly approved by IBM. The reclamation plan, post mine land use and progressive greenbelt development plan have been covered in Mining Plan/Mining scheme which is approved by IBM. The current mining scheme is valid till 31.03.2020 and is approved by IBM.
4	Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	Mining is being done at shallow depth. Thus there is no chance to intersect ground water table during mining operation. Working zone restricted to above ground water table. The depth of water table is approx 80 mts from mining horizon, thus there is no chance of intersection of ground water table.

		We undertake that no mining is/was carried out below ground water table and the same statusco will be maintain in future also.
5	The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.	It is being ensured. No natural water course has been obstructed and the same will be ensured going forward.
6	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Top soil is being stacked properly with proper slope as and when required for its use for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined out area are being exercised during mining operation.
7	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	Overburden and waste rock from the mining pit are being used for back filling. Backfilling and plantation detail provided in Annexure - 4 No external OB dump is in the project area. Monitoring and management of rehabilitated areas is continuous through supervision.
8	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.	No run off is being generated from mining activities. However to collect and manage rainwater during monsoon, part of mined out area is used as settling tank. Settled water is being used for sprinkling of quarry, roads, green belt development, etc. Catch drain, siltation pond, garland drain is being maintained and constructed with the progress of mining activity as and when required. Sump of adequate capacity is being provided and maintained as required
9	Plantation shall be raised in an area of 70.68 ha including a green belt of adequate width by planting the native species around the ML area,	Progressive plantation is being carried out in and around the ML area.

	roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.	Total 2500 nos sapling planted during the FY 2018-19.
10	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>A plan has already been prepared on the basis of discussions with Scientists of State unit office of Central Ground Water Board, Ranchi to implement suitable conservation measures to augment ground water resources in the area and is also submitted to the Regional Director, Central Ground Water Board, Patna, for any suggestions.</p> <p>As on date we are carrying out suitable conservation measures to augment ground water resources in the mining area viz. Rain water harvesting pond ,catch drain, siltation pond, garland drain, contour bunds etc.</p> <p>It may be noted that , there is no chance to intersect ground water table during mining operation.</p>
11	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>Mining is being done at shallow depth. Thus there is no chance to intersect ground water table during mining operation. Working zone restricted to above ground water table. The depth of water table is approx 80 mts from mining horizon , thus there is no chance of intersection of ground water table</p> <p>Potable water monitoring report is enclosed as Annexure -1</p>
12	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	<p>Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. No water from natural sources is being used for mining purposes.</p> <p>There is no chance to intersect ground water table during mining operation as total mining depth is around 20m and depth of ground water table is around 100m.</p>
13	Water monitoring both for quality and quantity shall be carried out at four locations namely one spring and three streams. Six monthly report should be submitted to the Ministry of Environment and Forest and its Regional Office	The quality parameter of the nearby spring has been monitored, report attached. Annexure 1

	located at Bhubneshwar.	
14	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	To keep vehicular emissions in control, company vehicles are periodically checked and repaired as and when required. All the transporters have been instructed to obtain PUC for their vehicles from the competent authority and submit to the concerned officer for verification. Vehicles are covered with tarpaulin and are being properly loaded while transportation.
15	Drills should either be operated with dust extractors or should be equipped with water injection system.	Wet drilling is being done in the drill holes for dust suppression.
16	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration 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. Ground vibration study has been conducted by IIT, Kharagpur. All efforts are being done to mitigate impact of blasting.
17	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	There is no proposal for production enhancement as of now.
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 effluent from mine, hence ETP has not been installed. The sewage water from domestic uses is being collected through individual Septic Tank and Soak Pits.
19	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <i>Presbytis phayrei</i> , <i>Melurus ursinus</i> etc. Spotted in the study area. Action plan for conservation of 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.	No endangered species of Flora and Fauna have been reported in the project area. 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

		<p>out on the forest road</p> <p>5. Transportation done only in day time</p> <p>Patrolling is being done.</p>
20	A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.	Final Mine Closure Plan of surrendered (part) area duly approved by Indian Bureau of Mines. Final mine closure plan along with details of corpus fund for entire life of the mine will be submitted to MoEF in due time. Based on the present resource estimate, and peak rated production capacity mentioned in EC, the tentative balance life is around 5 years. However, after completion of further detailed exploration, the resources estimate vis-à-vis 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

Sl 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 & Forest	Being adhered to.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Bauxite productions are in line with calendar plan. Details of excavation, quantum of mineral, OB, etc have been furnished for the year 2018-19 October to March annexed as Annexure -4
3	Four ambient air quality-monitoring station 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 metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Monitoring Reports is enclosed 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 Bhubneshwar and the State Pollution	Monitoring Reports is enclosed as Annexure 1

	Control Board / Central pollution Control Board once in six months.	
5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Two nos. of water tanker have been provided for sprinkling of water on haul roads and are generally being engaged at the places where active mining is in progress to contain fugitive dust. Water spraying at loading, unloading, and transfer points is being done.
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Noise monitoring is being done regularly at various locations of the work zone area. Workers engaged in operation of HEMMs, etc have been provided with PPEs such as ear plug and ear muffs.
7	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	There is no effluent discharge from Mine. Workshop has an Oil Catchment Pit to trap oil and grease.
8	Personnel working in dusty areas should wear protective respiratory devices and they should also 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.	Use of Personal Protective Equipment (PPE) by the individuals is being ensured. All the mine workers are being regularly and periodically sent to our own hospital for health checkup for any contraction of diseases due to exposure in dusty and noisy areas. Training on safety, health and environmental aspects of mining is being regularly imparted through VT centre and through various other training programmes conducted by the State Government, recognized agencies, etc.
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 Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy enclosed annexed 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.	Not applicable, as this is an operating mine.

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 budgetary provision and actual expenses for the year 2018-19 for environmental protection measure is enclosed. Separate funds earmarked for environmental protection measures annexed as Annexure -2
12	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.
13	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Officer, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.	Duly submitted.
14	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom 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 Center 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 locality concerned, within 7days 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. Copies, of the advertisement made in the local newspapers, have already been submitted to the Regional Office.



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

SHERENGDAG PLATEAU- ENVIRONMENTAL MONITORING REPORT

OCTOBER TO DECEMBER 2018

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

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4	Sherengdag Plateau-Sherengdag B Mines Pit
5	Sherengdag Plateau- Nav Prathmik Vidyalay (Dhanka Toli)
6	Sherengdag Plateau-Sherengdag B Village





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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

Report no: MEEPL/JAN0165/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	66.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	36.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.4
05.	Ammonia (NH ₃)	µg/m ³	400	5.6
06.	Ozone (O ₃)	µg/m ³	180	9.0
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.8
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.2
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

Report no: MEEPL/JAN0166/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau - <i>Jalim & Sanai Mines Pit</i>	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Jalim & Sanai Mines Pit*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	77.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.8
06.	Ozone (O ₃)	µg/m ³	180	10.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.3
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/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	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

Report no: MEEPL/JAN0167/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau - <i>Sherengdag A Mines Pit</i>	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Sherengdag A Mines Pit*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	62.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	27
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.0
05.	Ammonia (NH ₃)	µg/m ³	400	4.1
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.2
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

Report no: MEEPL/JAN0168/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau- <i>Sherengdag B Mines Pit</i>	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau - Sherengdag B Mines Pit

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	79.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	5.0
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	0.02
09.	Nickel (Ni)	ng/m ³	20	2.2
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

R Report no: MEEPL/JAN0169/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau – Nav Prathmik Vidyalay (Dhanka Toli)	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau- Nav Prathmik Vidyalay (Dhanka Toli)

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	26
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	3.8
06.	Ozone (O ₃)	µg/m ³	180	9.1
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	1.8
10.	Arsenic (As)	ng/m ³	06	2.4
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Environmental Monitoring Report

OCTOBER – DECEMBER 2018

Report no: MEEPL/JAN0170/2018-19	Date: 30 th January, 2019
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: Sherengdag Plateau- Sherengdag B Village	
Sample collected on: 17.12.2018	

LOCATION / IDENTIFICATION: Sherengdag Plateau- Sherengdag B Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	54.7
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	2.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	3.2
06.	Ozone (O ₃)	µg/m ³	180	10.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.24
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
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,
District – Ranchi 834009

SHERENG DAG PLATEAU- ENVIRONMENTAL MONITORING REPORT

JANUARY TO MARCH 2019

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

CONTENT

	LOCATION
A.	AMBIENT AIR QUALITY
1	Sherengdag Plateau-Sherengdag A Weigh Bridge
2	Sherengdag Plateau- Jalim & Sanai Mines Pit
3	Sherengdag Plateau-Sherengdag A Mines Pit
4	Sherengdag Plateau-Sherengdag B Mines Pit
5	Sherengdag Plateau- Nav Prathmik Vidyalay (Dhanka Toli)
6	Sherengdag Plateau-Sherengdag B Village
B.	NOISE LEVEL
1	Near Weigh Bridge
2	Shrengdag A Mines Pit
C.	SPOT NOISE LEVEL
1	Near Poclairn Shrengdag Mines (155.81 ha.)





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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0189/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	72.6
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	3.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.9
06.	Ozone (O ₃)	µg/m ³	180	8.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.19
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	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.3
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 :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0190/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau - <i>Jalim & Sanai Mines Pit</i>	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Jalim & Sanai Mines Pit*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	81.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.0
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.4
05.	Ammonia (NH ₃)	µg/m ³	400	3.8
06.	Ozone (O ₃)	µg/m ³	180	9.2
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	1.2
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	0.17

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0191/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau - <i>Sherengdag A Mines Pit</i>	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Sherengdag A Mines Pit*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	69.1
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	3.8
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	7.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.16
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	ng/m ³	20	1.4
10.	Arsenic (As)	ng/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.1

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0192/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau- <i>Sherengdag B Mines Pit</i>	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Sherengdag B Mines Pit*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	85.3
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	2.8
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	8.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.20
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	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0193/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau – Nav Prathmik Vidyalay (Dhanka Toli)	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau- Nav Prathmik Vidyalay (Dhanka Toli)

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	63.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.1
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	3.3
06.	Ozone (O ₃)	µg/m ³	180	7.4
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	1.6
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0194/2019-20	Date: 21 st May, 2019
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: Sherengdag Plateau- Sherengdag B Village	
Sample collected on: 11.03.2019	

LOCATION / IDENTIFICATION: Sherengdag Plateau- Sherengdag B Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	66.8
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	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.1
05.	Ammonia (NH ₃)	µg/m ³	400	1.9
06.	Ozone (O ₃)	µg/m ³	180	9.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.01
09.	Nickel (Ni)	ng/m ³	20	2.2
10.	Arsenic (As)	ng/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0195/2019-20	Date: 21 st May, 2019
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: 11.03.2019	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Near Weigh Bridge - Shrengdag Plateau	dB (A) Leq	75	62.2	70	53.7

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0196/2019-20	Date: 21st May, 2019
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: 11.03.2019	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Sherengdag A Mines Pit	dB (A) L_{eq}	75	60.8	70	55.1

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Environmental Monitoring Report

JANUARY – MARCH 2019

Report no: MEEPL/MAY0197/2019-20	Date: 21st May, 2019
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: 11.03.2019	

Location/Identification	Unit	Limit (day)	Result
Sherengdag Mines (155.81 ha.) Sherengdag Plateau Near Poclairn	dB (A) L_{eq}	75	68.2

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Annexure-2

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2018-19

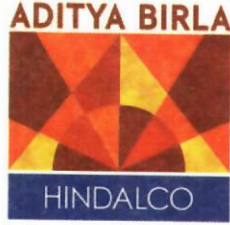
The composite cost during the year 2018-19 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115,13 Ha), Pakhar (15.58 Ha), Pakhar (109.507 Ha), Pakhar (8.09 Ha), Pakhar (35.12Ha), 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 2018-19	Actual (in Rupees) FY 2018-19 (from April'18 to Sep'18)	Actual (in Rupees) FY 2018-19 (from October'18 to March'19)
1	Pollution Control & Environment monitoring	15,21,000	8,82,300.00	8,43,969.95
2	Reclamation/ Back filing & Rehabilitation**	2,92,00,000	1,49,78,461.39	2,94,16,735.87
3	Green belt, Plantation & Water spraying arrangement	45,00,256	25,38,864.95	47,17,862.62
4	Rural Development	2,60,25,236	1,32,42,312.42	6,26,47,100.13

**Part of OB removed cost.



(Basudev Gangopadhyay)
Convenor (Quality & Environment)



Annexure - 3

Date: 10.01.19

Office Order

Environmental Cell has been re-constituted at Shrengdag Bauxite Mines (Area 155.81 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. Vidya Sagar Singh – Mines Manager (Coordinator)
2. Mr. Onkar Tiwari (Geologist) Member
3. Mr. Ajay Singh (Foreman) Member

Basudev Gangopadhyay
Convenor (Quality & Environment)

Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April'18 to March'19

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	Mining operation is stopped due to legal problem			
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	190078	1.638	5.19	335972
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	90674	1.366	0.457	46704
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	131115	4.36	4.76	156020.91
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	260995	14.29	23.08	499904.89
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	144670	8.38	3.91	276790.63
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	322340	13.57	13.68	649920.067
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	255430	3.65	3.20	655460
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	73190	1.04	0.45	159667.5
10	Jalim& Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	40395	1.04	0.45	42125

Annexure 4

11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	1470	0.00	0.00	2185.422	
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	1970	0.113	0.00	13168.924	
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	294000	3.31	2.43	521370	
Minerals & Minerals Limited									
16	Pakhar (15.58)	15.58	60000	28.04.1965 to 31.03.2030	35500	0.65	0.92	93116	
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	247130	2.37	2.82	378979	
18	Birmarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	185715	8.09	8.65	409391.00	

*Static information about the mines included in the above table



Basudev Gangopadhyay
Convenor (Quality & Environment)