



Ref No: HIL/LHD/GM (GEO)/MoEF/70

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 Serengdag Bauxite Mining (140.07 Ha) project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period October'18 to March'19.

**Ref:** Environmental Clearance letter no J-11015/243/2005-IA II (M) dated 23<sup>th</sup> 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'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  
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**Compliance of conditions laid down in Environmental Clearance**

**SERENDAG BAUXITE MINES (140.07 Ha)**

**Period: October'18- March'19**

**MoEF Environment Clearance ref: No. J-11015/243/2005-IA.II (M) dated 23 June'06**

<b>Sl No</b>	<b>Conditions</b>	<b>Compliance Status</b>
<b>Specific Conditions</b>		
1	All the conditions stipulated by the State Pollution Control Board in their consent to establish should be effectively implemented.	<p>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 31.03.2020. Productions of bauxite are within limits specified in consent to operate.</p> <p>Implementations of the stipulated conditions mentioned in consent to operate are being complied with.</p>
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 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	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 being carried out in non-forest area only. 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 is being spread over the backfilled area adequately for reclamation and rehabilitation of mined out areas.
5	The waste generated in the initial period shall be dumped temporarily and backfilled in the mined out area. There shall be no permanent external OB dump in the project area. Concurrent backfilling should start from the fifth year onwards. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-	<p>Waste/OB generated is used in backfilling, data enclosed.</p> <p>There is no external dump as on date. Concurrent backfilling is under progress.</p>

	sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on six monthly basis.	Monitoring and management of rehabilitated areas continuing with regular supervision.
6	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil and mineral dump. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.	<p>No runoff is generated from mining activities. However, to collect &amp; manage rain water during monsoon, part of mined out area is used as settling tank for the runoff. Sediment rain water is being used for watering the mine area, roads, green belt development etc.</p> <p>Catch drains, siltation ponds and Garland drain are being constructed and maintained as and when required with the progress of mining.</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	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.	During year 2018-19, around 1000 saplings have planted in this mine. Rest to be complied during project period.
8	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>No natural water course 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 statusco will be maintain in future also.</p>
9	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.	As of now, to augment the ground water resources, measures like Contour bunds, gullies and sump are being constructed. It may be noted that , there is no chance to intersect ground water table during mining 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	<p>The EC mentions that ground water is at depth of 90-100 mts and it is not intersecting ground water table during mining operation.</p> <p>Quality of potable water report attached as Annexure 1</p>

	(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.	
11	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Water is collected from rain water harvesting pond of Serengdag plateau.  We are not using natural water bodies, ground water for mining purposes. 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.
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.	There is no spring within the mining lease area.  Water quality report of nearby spring 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.	To keep vehicular emissions in control, company vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission.
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.	This work is in progress with the progress of mining activity.  Mined out pit will be converted into water reservoir, plantation will be carried out to stabilize the slopes and get them terraced.
15	Drills should either be operated with dust extractors or should be equipped with water injection system	Drilling is done with water pouring in the holes intermittently 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 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 till 31-03-20.

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 discharge from Mine, hence ETP has not been installed There is no residential accommodation in the mine area hence STP is not required.
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.	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. 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 23 years (Life is 8 years with surrender of forest land). 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**

<b>Sl No</b>	<b>Conditions</b>	<b>Compliance Status</b>
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Noted and 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 attached as Annexure - 4 for the year October'18 to March'19.

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 <sub>2</sub> , NO <sub>x</sub> 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.	Monitoring is being done. AAQ monitoring report attached as Annexure - 1
4	Data on ambient air quality (RPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> ) 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 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.
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 plug / muffs. Monitoring report enclosed as Annexure 1
7	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	There is no effluent discharge from Mine.
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.	Complied. Use of Personal Protective Equipment is provided & used by the individuals. We have a well-equipped hospital at mine site where health checkup of workmen is carried out regularly. Training on safety, health & environmental aspects of mining is being regularly imparted through VT training & other training programmes.
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 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
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.
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
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 <a href="http://envfor.nic.in">http:// envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. (Documents already submitted)



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## **Mahabal Enviro Engineers Pvt. Ltd.**

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

### **SHERENG DAG PLATEAU- ENVIRONMENTAL MONITORING REPORT**

**OCTOBER TO DECEMBER 2018**

**For Mahabal Enviro Engineers Pvt. Ltd.**

**Vijay Pandey**  
**SENIOR EXECUTIVE**







# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

## CONTENT

	LOCATION
<b>A.</b>	<b>AMBIENT AIR QUALITY</b>
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





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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>Report no:</b> MEEPL/JAN0165/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	66.9
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	36.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.0
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.36
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>Report no:</b> MEEPL/JAN0166/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> <b>Location:</b> Sherengdag Plateau - <i>Jalim &amp; Sanai Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	77.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	35.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.3
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.5
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>Report no:</b> MEEPL/JAN0167/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau - <i>Sherengdag A Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	62.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	27
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.0
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.2
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.0
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.0
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>Report no:</b> MEEPL/JAN0168/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau- <i>Sherengdag B Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	79.5
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	35.0
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.3
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.0
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.2
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.0
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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SENIOR EXECUTIVE





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Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>R Report no:</b> MEEPL/JAN0169/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau – Nav Prathmik Vidyalay (Dhanka Toli)	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	58
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	26
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	3.0
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





# Mahabal Enviro Engineers Pvt. Ltd.

## Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,  
Mobile No: +91 9431.102.102 / +91 9955.358.262,  
E-mail: [mahabalanranchi@gmail.com](mailto:mahabalanranchi@gmail.com)

Hindalco Industries :

Environmental Monitoring Report

OCTOBER – DECEMBER 2018

<b>Report no:</b> MEEPL/JAN0170/2018-19	<b>Date:</b> 30 <sup>th</sup> January, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample: Location:</b> Sherengdag Plateau- <b>Sherengdag B Village</b>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	54.7
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	25.1
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.0
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.0
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	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](mailto:ecoventures.mumbai@gmail.com) / [ecoventures@eco-ventures.in](mailto:ecoventures@eco-ventures.in)

## **Mahabal Enviro Engineers Pvt. Ltd.**

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

### **SHERENGDAG PLATEAU- ENVIRONMENTAL MONITORING REPORT**

**JANUARY TO MARCH 2019**

**For Mahabal Enviro Engineers Pvt. Ltd.**

**Vijay Pandey**  
**SENIOR EXECUTIVE**







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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

## CONTENT

	LOCATION
<b>A.</b>	<b>AMBIENT AIR QUALITY</b>
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>B.</b>	<b>NOISE LEVEL</b>
1	Near Weigh Bridge
2	Shrengdag A Mines Pit
<b>C.</b>	<b>SPOT NOISE LEVEL</b>
1	Near Poclain Shrengdag Mines (155.81 ha.)





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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0189/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau - <i>Sherengdag A Weigh Bridge</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	72.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	30.4
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.1
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.19
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.5
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.0
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.3
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.2

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0190/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> <b>Location:</b> Sherengdag Plateau - <i>Jalim &amp; Sanai Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	81.7
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	37.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.0
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.2
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.5
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.17

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0191/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau - <i>Sherengdag A Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	69.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.6
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.16
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.5
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.1

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0192/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample: Location:</b> Sherengdag Plateau- <i>Sherengdag B Mines Pit</i>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	85.3
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	29.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.3
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.20
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.0
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.1
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.7
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0193/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Sherengdag Plateau – Nav Prathmik Vidyalay (Dhanka Toli)	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	63.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	33.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.1
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.3
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.25
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.3

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0194/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample: Location:</b> Sherengdag Plateau- <b>Sherengdag B Village</b>	
<b>Sample collected on:</b> 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 <sub>10</sub>	µg/m <sup>3</sup>	100	66.8
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	28.5
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.1
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	1.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.27
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.2
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no:</b> MEEPL/MAY0195/2019-20	<b>Date:</b> 21 <sup>st</sup> May, 2019
<b>Sample described by customer:</b> Measurement of Noise	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Description: <b>Measurement of Noise</b>	
Sampling Method: <b>Instrumental, using Sound level Metter</b>	
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.

**Vijay Pandey**  
**SENIOR EXECUTIVE**







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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no: MEEPL/MAY0196/2019-20</b>	<b>Date: 21<sup>st</sup> May, 2019</b>
<b>Sample described by customer: Measurement of Noise</b>	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: <b>Measurement of Noise</b>	
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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Hindalco Industries :

Environmental Monitoring Report

JANUARY – MARCH 2019

<b>Report no: MEEPL/MAY0197/2019-20</b>	<b>Date: 21<sup>st</sup> May, 2019</b>
<b>Sample described by customer : Measurement of Spot Noise</b>	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: <b>Measurement of Spot Noise</b>	
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

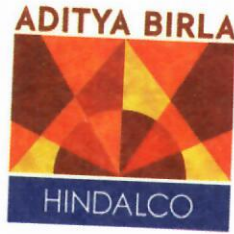
The composite cost during the year 2018-19 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (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 140.06 Ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

1. Mr. Shambhu Saran Vasistha -Mines Manager (Coordinator)
2. Mr. Mangal Hansda (Coordinator)
3. Mr. Navnit Kr. Jaiswal-Mines Foreman (Member)

A handwritten signature in blue ink, appearing to be "Basudev Gangopadhyay", with a horizontal line underneath.

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	
<b>Minerals &amp; Minerals Limited</b>									
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)