



Ref No: III-LHD/GM(Geo)/MoE/1473

Date: 28.11.2017

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 Apr'17 to Sept'17.

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


Sr.

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 located in Gumla, Jharkhand for the period **Apr'17 to Sept'17**.

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED


Basudev Gangopadhyay
GM(Geology)

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

SERENDAG BAUXITE MINES (140.07 Ha)

Period: Apr'17- Sept'17

MoEF Environment Clearance ref: No. J-11015/243/2005-1A.II(M) dated 23 June '06

Sl 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 are fulfilled.
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	This provision was taken care during lease renewal, the said permission was granted by competent authority D.C. office Ranchi (Documents already submitted)
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	Post Sep 14, Mining operation resume during August'17. Mining was carried out in non forest area only.
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 was stacked separately.
5	The waste generated in the initial period shall be dumped temporarily and backfilled in the mined out area. There shall be no permanent external OB dump in the project area. Concurrent backfilling should start from the fifth year onwards. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on six monthly basis.	Waste/OB generated is used in backfilling, data enclosed. Monitoring and management of rehabilitated areas continuing through 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	Post Sep 14 , Mining operation resume during August'17.No runoff is generated from mining activities. However, to collect & 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. Catch drains, siltation ponds and Garland drain is being constructed and maintained as and when required with the progress of mining.

	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.	
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 MI 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.	Post Sep 14 , Mining operation resume during August'17. During 2017-18, around 1000 saplings were planted. 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.	Post Sep 14 , Mining operation resume during August'17. No natural water course and/or water resources was obstructed due to any mining operations in past. This will be complied in future also post resumption of mining activity.
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 resource measures like check dams, contour bunds, gullies are being constructed.
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.	Regular monitoring is being carried out by recognized agency, Annexure-1.
11	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Post Sep 14, Mining operation resume during August'17. Water is collected from rain water harvesting pond of Serengdag plateau. Water cess is being paid regularly to JSPCB. We are not using natural water bodies, ground water for mining purposes.
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.

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.	Mined out pit will be converted into water reservoir, plantation will be carried out to stabilize the terraced.
15	Drills should either be operated with dust extractors or should be equipped with water injection system	Post Sep 14, Mining operation resume during August 17. 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. 12.00 Noon -1.00 PM. Controlled blasting method is in practice. All efforts are being taken to mitigate impact of blasting.
17	Consent to operate should be obtained from SPCB prior to start of production of mine	Consent to operate is obtained from 13-06-17 to 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 ETP 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.	No endangered species of Flora and Fauna has been reported in the project area. Suitable conservation measures to protect endangered flora & fauna implemented in past. 1. Permanent pillars are established within the mine lease area at 7.5m from the forest boundary. 2. Maintenance of the forest road 3. Ensured necessary air and noise pollution control measures. 4. Daily water sprinkling is being carried out on the forest road 5. Transportation done only in day time The same will continue post resumption of mining activity.
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 Plan will be prepared & submitted at appropriate time. Presently we are having approved progressive mine Closure

final mine closure for approval.	Plan.
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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 & Forests.	Being adhered to. Mining is being done as per approved Mining plan/scheme.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made	Excavation of over burden & bauxite are within calendar plan. Details attached as Annexure for the financial year FY17-18.
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.	Monitoring is being done. AAQ monitoring report attached. 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 attached. 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 no of mobile water tanker with sprinkling facility have 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.

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, 1992 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Post Sep 14 . Mining operation resume during August'17. 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. Post Sep 14 . Mining operation resume during August'17. 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.(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.	Final mine closure plan will be submitted at appropriate time. Presently we are having approved progressive mine closure plan.
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 & actual expenses for environmental protection measure is submitted. (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	Agreed

	reports.	
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.	Done
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)



Annexure - 1
Eco Ventures Pvt. Ltd.

Regd. Office- 207, Sai Vastya Vihar, Tower II, Ground, New Deira, 110016
Corporate Office- 75 Bhaveshwar Bhuvan- Opp Portuguese Church, Near Chidambaram, Udaygiri, Goregaon
Goikhale Road (North), Dada, (West), Mumbai-400 026. Tel: +91 22 24370520 - 2572
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

JULY TO SEPTEMBER 2017

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:mahabalaranchi@gmail.com

Hindalco Industries Environmental Monitoring Report JULY - SEPTEMBER 2017

CONTENT

	LOCATION
	AMBIENT AIR QUALITY
1	Sherengdag Plateau-Sherengdag 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
	SURFACE WATER
1	Near Weigh Bridge
2	Shrengdag A Mines Pit



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room, Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



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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: mahabairanchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0121/2017-18

Date: 24th October, 2017

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 Weigh Bridge*

Sample collected on: 19.09.2017

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Sherengdag Weigh Bridge*

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	58.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	24.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.3
05.	Ammonia (NH ₃)	µg/m ³	400	11.3
06.	Ozone (O ₃)	µg/m ³	180	13.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.17
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	2.4
10.	Arsenic (As)	ng/m ³	06	2.0
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





Mahabal Enviro Engineers Pvt. Ltd.

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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: mahabairanchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Report no: MEEPL/OCT0122/2017-18

Date: 24th October, 2017

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 - *Jalim & Sanai Mines Pit*

Sample collected on: 20.09.2017

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	54.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	22.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.5
05.	Ammonia (NH ₃)	µg/m ³	400	13.5
06.	Ozone (O ₃)	µg/m ³	180	13.3
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	2.4
10.	Arsenic (As)	ng/m ³	06	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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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: mahabalaranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0123/2017-18

Date: 24th October, 2017

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 A Mine - Pit*

Sample collected on: 19.09.2017

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	47.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.2
05.	Ammonia (NH ₃)	µg/m ³	400	11.8
06.	Ozone (O ₃)	µg/m ³	180	13.3
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	3.2
10.	Arsenic (As)	ng/m ³	06	2.1
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

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Branch Office:

At Booty, Near PHED Colony, Behind Pump House, F-7 - RMCC, District - Ranchi 834009.

Mobile No: +91 9431 102 102 / +91 9955 358 262,

E-mail: mahabalaranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Report No: MEEPL/OCT0124/2017-18

Date: 24th October, 2017

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 Mines Pit*

Sample collected on: 19.09.2017

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	50.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	24.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.0
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.0
05.	Ammonia (NH ₃)	µg/m ³	400	10.1
06.	Ozone (O ₃)	µg/m ³	180	12.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.18
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	2.7
10.	Arsenic (As)	ng/m ³	06	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room. Near J B Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, F.D - RMCC, District - Ranchi 834009
Mobile No: +91 9431.102.102 / +91 9955.358.262,
E-mail: mahabalranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Report no. MEEPL/OCT0125/2017-18

Date: 24 October, 2017

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: 20.09.2017

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}	$\mu\text{g}/\text{m}^3$	100	45.0
02.	Particulate Matter (size less than 2.5 μm) $\text{PM}_{2.5}$	$\mu\text{g}/\text{m}^3$	60	19.7
03.	Sulphur Dioxide (SO_2)	$\mu\text{g}/\text{m}^3$	80	3.6
04.	Nitrogen Dioxide (NO_2)	$\mu\text{g}/\text{m}^3$	80	6.1
05.	Ammonia (NH_3)	$\mu\text{g}/\text{m}^3$	400	11.3
06.	Ozone (O_3)	$\mu\text{g}/\text{m}^3$	180	13.0
07.	Carbon Monoxide (CO)	mg/m^3	02	0.20
08.	Lead (Pb)	$\mu\text{g}/\text{m}^3$	1.0	0.03
09.	Nickel (Ni)	ng/m^3	20	2.9
10.	Arsenic (As)	ng/m^3	06	2.3
11.	Benzene (C_6H_6)	$\mu\text{g}/\text{m}^3$	05	3.1
12.	Benzo (a) Pyrene	$\mu\text{g}/\text{m}^3$	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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SENIOR EXECUTIVE



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Mobile No: +91 9431 102 102 / +91 9955 358 262.
E-mail: mahabairanchi@gmail.com

Hindalco Industries:

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Report no: MEPL/OCT0126/2017-18

Date: 24th October, 2017

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: 19.09.2017

LOCATION / IDENTIFICATION: Sherengdag Plateau- Saerengdag B Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	42.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	19.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.7
05.	Ammonia (NH ₃)	µg/m ³	400	10.7
06.	Ozone (O ₃)	µg/m ³	180	12.0
07.	Carbon Monoxide (CO)	mg/m ³	02	0.22
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	2.5
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	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Head Office: Plot No. F-7, Road No. 21, Wagle Estate, Thane West - 400604, Maharashtra, India
(600 m from Hotel Rukhmini Palace Turn Opp Toyota Show Room Near J R Sawant Bus Stop)
Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, HO – RMC.C, District – Ranchi 834009.
Mobile No: +91 9431.102.102 / +91 9955.358.262.
E-mail mahabalaacni@gmail.com

Hindalco Industries:

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0127/2017-18	Date: 24 th October, 2017
Sample described by customer : SURFACE-WATER	
Client Name: Hindalco Industries Limited	
Client Address: Sherengdag	
Postal code: 835203	
State: Jharkhand	
Country: India	
Sample Type: SURFACE WATER	
Marks on Sample: Location: <i>Sherengdag A Mines Pit</i>	
Quantity: 5 L X 2 No. PVC Can	
Sample collected on: 19.09.2017	

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	--	8.0	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H-8, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 nd Ed. 2012, 4500-Cl-4, 4-69
7	Total Dissolved Solids	mg/l	461	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	50	200 max	APHA 22 nd Ed. 2012, 4500-Cl-6, 4-69
9	Alkalinity Total (as CaCO ₃)	mg/l	45	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	42	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
11	Sulphate (as SO ₄)	mg/l	30.0	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	6.0	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84



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E-mail: mahabalranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Continuation Sheet

MEEPL/OCT0127/2017-18

Report no: MEEPL/OCT0127/2017-18

Date: 27th October, 2017

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
14	Fluoride (as F)	mg/l	0.10	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
15	Calcium (as Ca)	mg/l	10.2	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
16	Iron (as Fe)	mg/l	0.13	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	0.03	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	7.0	7-8	APHA 20 th ED. Method 4500-o.g.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE



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E-mail: mahabairanchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OC/10128/2017-1B

Date: 21st October, 2017

Sample described by customer : SURFACE-WATER

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample Type: SURFACE WATER

Marks on Sample: Location: *Sherengdag B Mines Pit*

Quantity: 5 L X 2 No. PVC Can

Sample collected on: 19.09.2017

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	--	8.2	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	458	500 max.	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	48	200 max.	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
9	Alkalinity Total (as CaCO ₃)	mg/l	40	200 max.	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	45	250 max.	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-72
11	Sulphate (as SO ₄)	mg/l	34.7	200 max.	APHA 22 nd Ed. 2012, 4500-SO ₄ -G, 4-190
12	Boron (as B)	mg/l	0.20	0.5 max.	APHA 22 nd Ed. 2012, 4500-BB, 4-25
13	Magnesium (as Mg)	mg/l	6.3	30 max.	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84



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Hindalco Industries:

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Continuation Sheet
MEEPL/OCT0128/2017-18

Date: 24th October, 2017

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
14	Fluoride (as F)	mg/l	0.10	1 max	APHA 22 nd Ed. 2012, 4500-FR & D 4-84, 4-87
15	Calcium (as Ca)	mg/l	10.2	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B-3-67
16	Iron (as Fe)	mg/l	0.11	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	0.03	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-3-23
23	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3114-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.

For Mahabal Enviro Engineers Pvt. Ltd.

Anuv Pandey
SENIOR EXECUTIVE



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BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2016-17

The composite cost during the year 2017-18 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 (80.87 Ha) Kujam II (157.38 Ha) and Bagru (75.41 Ha), Hisri New (14.55 Ha), Chiro kukud(152.57 Ha), Orsa pat(196.36 Ha), Bhusar (65.31 Ha)& Bimarla Bauxite Mines (134.52 Ha).

Sl No	Description	Budget (in Rupees) FY 2017-18	Actual (in Rupees) FY 2017-18 (from April'17 to Sep'2017)
1	Pollution Control & Environment monitoring	1316000.00	651832.00
2	Reclamation/ Back filing & Rehabilitation**	300000000.00	131262375.00
3	Green belt, Plantation & Water spraying arrangement	3400000.00	3373300.00
4	Rural Development	40000000.00	18500000.00

**Part of OB removed cost.



(Basudev Gangopadhyay)
Convenor (Quality & Environment)



Aditya Birla 3

Date: 03.04.17

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. Amar Bharti-Mines Manager (Coordinator)
2. Mr. Navnit Kr. Jaiswal-Mines Foreman (Member)

Basudev Gangopadhyay
Convenor (Quality & Environment)

ANNEXURE-4

PRODUCTION, MINED OUT, BACKFILLED, PRODUCTION AND OVERBURDEN REMOVAL FROM APR-17 to Sep-17

NAME OF THE MINES	MINING LEASE AREA (IN HA)	MINED OUT AREA (HA)	BACK FILLED AREA (HA)	PRODUCTION (In MT)	OVERBURDEN (In Cu M)
Shrengdag Bauxite	155.81	2.57	2.00	148229.00	141538.00
Gurdari Bauxite Mines	584.19	8.10	4.70	175860.00	391707.00
Jalim & Sanai	12.14	1.25	0.50	25137.00	16365.00
Serangdag	140.06	0.00	0.00	0.00	0.00
Pakhar Buxite Mines	115.13	1.52	1.89	137420.00	166565.00
Pakhar Buxite Mines	8.09	0.00	0.00	0.00	0.00
Kujam-I	80.87	1.87	1.95	67925.00	108182.00
Kujam-II	157.38	3.32	3.70	132480.00	269516.00
Amtipani	190.95	4.70	3.17	102545.00	138980.00
Chiro-Kukud	152.57	1.73	1.28	41460.00	64089.00
Orsa Bauxite Mines	196.36	0.00	0.00	0.00	0.00
Hisri New	14.55	1.05	0.91	35561.00	44239.00
Bhusar	65.31	0.16	1.80	63239.00	88532.00
Bagru	75.41	0.00	0.00	0.00	0.00
Minerals & Minerals Limited					
Pakhar Buxite Mines	109.51	1.50	1.70	136490.00	152916.00
Pakhar Buxite Mines	15.58	0.20	0.00	0.00	2716.00
Bimarla Bauxite Mines	134.52	4.71	5.86	67850.00	164820.00

(Basudev Gangopadhyay)
Convenor (Quality & Environment)