ADITYA BIRLA
HINDALCO

Ref No: HIL/LHD/GM (GEO)/MoEF/ 0082 Date: 25.05.2018

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 Oct'17 to March'18.**

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 located in Gumla, Jharkhand for the period **Oct'17 to March'18**.

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

Hindalco Industries Limited
Mines Division, Court Road, Lohardaga 835302, Jharkhand, India
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Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India
T: +91 22 6691 7000 | F: +91 22 6691 7001
Corporate ID No.: L27020MH1958PLC011238

Compliance of conditions laid down in Environmental Clearance

SHRENDAG BAUXITE MINES(155.81 Ha)
Period: Period: Oct' 17-Mar '18
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 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.	Mining Lease is granted by the State Govt. after due consideration and Cabinet approval on recommendation of DC who is the competent authority to give permission for using the agricultural land for non-agricultural purpose
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.
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.
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	Overburden and waste rock from the mining pit are being used for back filling**.** Backfilling and plantation detail provided in

	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.	Annexure-4.
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, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.	Progressive plantation is being carried out in and around the ML area. Total 1400 plantation carried out during the FY2017-18.
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.	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. Recommendation of CGWB shall be implemented to augment the ground water resources of the area. Copy of letter already submitted to regional office. As on date we are carrying out suitable conservation measures to augment ground water resources in the mining area viz. catch

		drain, siltation pond, garland drain, contour bunds etc.
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.	It is being monitored. Monitoring report is enclosed as Annexure-1.
12	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	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.
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 located at Bhubneshwar.	The quality parameter of the nearby spring for off monsoon season has been monitored, report attached.
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. 12.00 Noon -1.00 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	There is no effluent from mine, hence ETP has not been installed. The sewage water from domestic uses is being collected

	mining operations.	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, *Presbytis phayrei*, *Melsurus ursinus* 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.	Action plan for conservation of flora and fauna spotted in the study area was prepared after due consultation with the local forest Dept. Implementation is in process. Measures like boundary pillars , fire watcher at forest boundary, transportation of bauxite during day time only etc are under implementation
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 5-6 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.	Excavation & bauxite production are in line with calendar plan. Details of excavation, quantum of mineral, OB, etc have been furnished for the financial year 2017-18 and 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 locations have been fixed after due consultation of SPCB and regular monitoring is being carried out. Monitoring Reports is enclosed as Annexure-1.
4	Data on ambient air quality (RPM, SPM, SO_2, NOx) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Monitoring locations have been fixed after due consultation of SPCB. Monitoring Reports is enclosed as Annexure-1.
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 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. 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.	Complied. 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
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 2017-18 for environmental protection measure is enclosed. Separate funds earmarked for environmental protection measures.
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	Complied. Copies, of the advertisement made in the local newspapers, have already been submitted to the Regional Office.

	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.	

Eco Ventures Pvt. Ltd.
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Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Porthugese Church, Near Dindayal Upadhyay Garden, Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.
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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

JANUARY TO MARCH 2018

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:
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CONTENT

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Report no: MEEPL/APR0069/2018-19 **Date:** 20th April, 2018

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 Weigh Bridge***
Sample collected on: 14.03.2018

LOCATION / IDENTIFICATION: Sherengdag Plateau - *Sherengdag A Weigh Bridge*				
Sl. No.	**PARAMETERS**	**UNIT**	**Standard Limit**	**Concentration**
01.	Particulate Matter (size less than 10 µm) PM_{10}	µg/m³	**100**	**72.0**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**38.9**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**4.3**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**6.1**
05.	Ammonia (NH_3)	µg/m³	**400**	**11.3**
06.	Ozone (O_3)	µg/m³	**180**	**12.4**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.29**
08.	Lead (Pb)	µg/m³	**1.0**	**0.02**
09.	Nickel (Ni)	ng/m³	**20**	**2.2**
10.	Arsenic (As)	ng/m³	**06**	**2.0**
11.	Benzene (C_6H_6)	µg/m³	**05**	**2.2**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.3**

For Mahabal Enviro Engineers Pvt. Ltd.

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

Vijay Pandey
SENIOR EXECUTIVE

Mahabal Enviro Engineers Pvt. Ltd.

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Report no: MEEPL/APR0070/2018-19 **Date:** 20th April, 2018

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: 14.03.2018

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/m³	**100**	**67.3**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**32.7**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**4.2**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**6.5**
05.	Ammonia (NH_3)	µg/m³	**400**	**10.2**
06.	Ozone (O_3)	µg/m³	**180**	**12.5**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.2**
08.	Lead (Pb)	µg/m³	**1.0**	**0.02**
09.	Nickel (Ni)	ng/m³	**20**	**2.0**
10.	Arsenic (As)	ng/m³	**06**	**2.0**
11.	Benzene (C_6H_6)	µg/m³	**05**	**2.0**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.30**

For Mahabal Enviro Engineers Pvt. Ltd.

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

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Report no: MEEPL/APR0071/2018-19	**Date:** 20th April, 2018
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 Mines Pit***
Sample collected on: 14.03.2018

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/m³	**100**	**61.3**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**30.2**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**3.9**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**5.2**
05.	Ammonia (NH_3)	µg/m³	**400**	**10.1**
06.	Ozone (O_3)	µg/m³	**180**	**12.5**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.2**
08.	Lead (Pb)	µg/m³	**1.0**	**0.02**
09.	Nickel (Ni)	ng/m³	**20**	**2.0**
10.	Arsenic (As)	ng/m³	**06**	**2.3**
11.	Benzene (C_6H_6)	µg/m³	**05**	**2.0**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.3**

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

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Report no: MEEPL/APR0072/2018-19 **Date:** 20th April, 2018

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: 14.03.2018

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/m³	**100**	**63.1**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**30.8**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**3.2**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**6.6**
05.	Ammonia (NH_3)	µg/m³	**400**	**9.5**
06.	Ozone (O_3)	µg/m³	**180**	**12.2**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.27**
08.	Lead (Pb)	µg/m³	**1.0**	**0.02**
09.	Nickel (Ni)	ng/m³	**20**	**2.4**
10.	Arsenic (As)	ng/m³	**06**	**2.1**
11.	Benzene (C_6H_6)	µg/m³	**05**	**2.0**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.3**

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

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Report no: MEEPL/APR0073/2018-19 **Date:** 20th April, 2018

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: 14.03.2018

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/m³	**100**	**55.8**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**28.1**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**3.8**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**5.8**
05.	Ammonia (NH_3)	µg/m³	**400**	**10.7**
06.	Ozone (O_3)	µg/m³	**180**	**12.3**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.29**
08.	Lead (Pb)	µg/m³	**1.0**	**0.03**
09.	Nickel (Ni)	ng/m³	**20**	**2.3**
10.	Arsenic (As)	ng/m³	**06**	**2.1**
11.	Benzene (C_6H_6)	µg/m³	**05**	**3.0**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.4**

For Mahabal Enviro Engineers Pvt. Ltd.

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

Vijay Pandey
SENIOR EXECUTIVE

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Report no: MEEPL/APR0074/2018-19 **Date:** 20th April, 2018

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: 14.03.2018

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/m³	**100**	**53.2**
02.	Particulate Matter (size less than 2.5 µm) $PM_{2.5}$	µg/m³	**60**	**26.6**
03.	Sulphur Dioxide (SO_2)	µg/m³	**80**	**3.8**
04.	Nitrogen Dioxide (NO_2)	µg/m³	**80**	**5.9**
05.	Ammonia (NH_3)	µg/m³	**400**	**10.2**
06.	Ozone (O_3)	µg/m³	**180**	**12.2**
07.	Carbon Monoxide (CO)	mg/m³	**02**	**0.25**
08.	Lead (Pb)	µg/m³	**1.0**	**0.02**
09.	Nickel (Ni)	ng/m³	**20**	**2.5**
10.	Arsenic (As)	ng/m³	**06**	**2.2**
11.	Benzene (C_6H_6)	µg/m³	**05**	**2.0**
12.	Benzo (a) Pyrene	µg/m³	**01**	**0.3**

For Mahabal Enviro Engineers Pvt. Ltd.

Mahabal Enviro Eng. Pvt. Ltd. Ranchi

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:mahabalranchi@gmail.com

Report no: MEEPL/APR0075/2018-19	**Date:** 20th April, 2018
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: **14.03.2018**	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Near Weigh Bridge - Shrengdag Plateau	dB (A) L_{eq}	75	60.1	70	52.5

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

Mahabal Enviro Engineers Pvt. Ltd.

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E-mail:mahabalranchi@gmail.com

Report no: MEEPL/APR0076/2018-19	**Date:** 20th April, 2018
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: **14.03.2018**	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Sherengdag A Mines Pit	**dB (A) L_{eq}**	**75**	**64.1**	**70**	**57.7**

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

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E-mail:mahabalranchi@gmail.com

Report no: MEEPL/APR0077/2018-19	**Date:** 20th April, 2018
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: **14.03.2018**	

Location/Identification	Unit	Limit (day)	Result
Sherengdag Mines (155.81 ha.) Sherengdag Plateau Near Poclain	**dB (A) L_{eq}**	**75**	**70.5**

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE

Annexure-2

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2017-18

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 (80.97 Ha) Kujam II (157.38 Ha) and Bagru (75.41 Ha), Hisri New (14.55 Ha), Chiro kukud, *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)	Actual (in Rupees) FY 2017-18 (from Oct'17 to March'2018)
1	Pollution Control & Environment monitoring	**1316000**	**651832**	**984450**
2	Reclamation/ Back filing & Rehabilitation**	**300000000**	**131262375**	**31383827**
3	Green belt, Plantation & Water spraying arrangement	**3400000**	**3373300**	**2921501**
4	Rural Development	**40000000**	**18500000**	**10439844**

**Part of OB removed cost.

(Basudev Gangopadhyay)
Convenor (Quality & Environment)

Annexure-3

ADITYA BIRLA
HINDALCO

Date: 03.04.17

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. Tathagata Das (Geologist) Member
3. Mr. Abhinav kumar (Asstt. Officer) Member
4. Mr. C .S. Prasad (Foreman) Member

Basudev Gangopadhyay
Convenor (Quality & Environment)

Hindalco Industries Limited
Mines Division, Court Road, Lohardaga 835302, Jharkhand, India
T: +91 6526 224112/224015/223113 | E: hindalco@adityabirla.com | W: www.hindalco.com
Registered Office: Century Bhavan, 3rd Floor, Dr. Annie Besant Road, Worli, Mumbai 400 030, India | T: +91 22 6662 6666
Corporate ID No.: L27020MH1958PLC011238

Annexure – 4

PRODUCTION, MINED OUT, BACKFILLED, PRODUCTION AND OVERBURDEN REMOVAL FROM April-17 to March-18					
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	4.37	2.91	236504.00	404146.00
Gurdari Bauxite Mines	584.19	10.72	6.30	324060.00	529722.00
Jalim & Sanai	12.14	1.75	0.70	36037.00	43750.00
Serangdag	140.06	1.00	0.70	43825.00	66636.00
Pakhar Buxite Mines	115.13	2.60	3.01	264505.00	400330.00
Pakhar Buxite Mines	8.09	0.00	0.00	0.00	0.00
Kujam-I	80.87	3.95	1.54	141655.00	254013.00
Kujam-II	157.38	6.97	6.93	291458.00	596397.00
Amtipani	190.95	7.05	6.81	149560.00	262112.00
Chiro-Kukud	152.57	3.54	3.59	90130.00	127590.00
Orsa Bauxite Mines	196.36	0.30	0.00	6620.00	38007.00
Hisri New	14.55	1.05	0.91	90001.00	46929.00
Bhusar	65.31	0.19	2.24	108666.00	209691.00
Bagru	75.41	0.00	0.00	0.00	0.00
Minerals & Minerals Limited					
Pakhar Buxite Mines	109.51	2.61	2.84	277605.00	414049.00
Pakhar Buxite Mines	15.58	0.46	0.29	28560.00	67552.00
Bimarla Bauxite Mines	134.53	9.92	8.39	156420.00	251775.00

(Basudev Gangopadhyay)
Convenor (Quality & Environement)