



Ref No: HIL/LHD/GM (Geo)/MoEF/443

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 Chiro-Kukud (152.57 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Gumla, Jharkhand for the period Apr'17 to Sept'17.

Ref: Environmental Clearance letter no J-11015/240/2006-1A II(M) dated 17th May 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Chiro-Kukud (152.57 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

CHIRO KUKUD BAUXITE MINES

Period: Apr'17- Sept'17

J-11015/240/2006-IA.II (M) Dated 17.5.2007

Sl No	Conditions	Compliance Status
Specific Conditions		
1	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa foundation Vs Union of India in writ petition (civil) no 460 of 2004, as may be applicable to this project	Noted.
2	Environmental Clearance is subject to obtaining clearance from Wildlife (Protection) Act 1972 from the competent authority.	Wildlife Management plan has been submitted to Chief Wildlife Warden.
3	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Implementation of the stipulated conditions are fulfilled.
4	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.
5	Mining shall not intersect groundwater. The mine working shall be restricted to above ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	As per the mining plan, mining is being carried out at shallow depth, at no point of time mining activities will intersect the ground water table.
6	The project proponent shall ensure that the mining shall be carried out in small blocks and at a given point of time active mining shall not be more than 2.0 ha.	Mining is being carried out in small blocks only.
7	The project proponent shall ensure that no natural water course shall be obstructed due to any mining operations.	No natural water course is being obstructed due to any mining operations.
8	Top soil, if any, shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Sequential backfilling and reclamation of the mined out area is being practiced during mining operation.
9	The overburden generated during the initial year shall be kept as temporary dump. Concurrent backfilling starts from the 2 nd year onwards and	The overburdens generated during the initial year are kept as temporary dump. Concurrent backfilling started from the

	there shall be no external dump at the end of the mine life	2 nd year onwards and there shall be no external dump at the end of the mine life. Data enclosed.
10.	The entire excavated area of 86 ha shall be reclaimed, out of which 66 ha land shall be returned to rayats for agricultural purpose and in 20 ha plantation shall be raised. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	This is being complied and also will be complied with the progress of mining work and excavation.
11	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.	Catch drains and siltation ponds of appropriate size have been constructed to arrest silt and sediment flows from mine working. The water so collected are being utilized for watering the mine area, roads, green belt development etc. The drains are regularly desilted particularly after monsoon and maintained properly. Garland drains and sump of appropriate size are provided.
12	Dimension of the retaining wall at the OB benches within the mine to check run-off and siltation should be based on rainfall data.	The dimension of the retaining wall of OB dumps is based on the average rainfall.
13	Plantation shall be raised in an area of 20.0 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.	Plantation is being carried out progressively. Total 1900 saplings have been planted during the FY 2017-18.
14	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.	Suitable measures such as recharge pit, check dam, garland drain have been adopted to augment ground water resources in the area.

15	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-I.
16	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	We are not using any natural water for mining purpose. Water is used for sprinkling and gardening is being drawn from rain water harvesting pond.
17	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.	Vehicle engaged in mining operation are regularly checked and maintenance of vehicles is being done. The vehicles are being covered with tarpaulin while transportation of mineral.
18	Drills should either be operated with dust extractors or should be equipped with water injection system.	Wet drilling is being done in the holes for dust suppression.
19	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. All efforts are being taken to mitigate impact of blasting.
20	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	There is no proposal for production enhancement.
21	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 is not required to install. The sewage water from domestic uses is treated through septic tanks and soaks pits.
22	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Leopard, Indian Wolf, Indian elephant, Indian small civet, Indian Python, 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	Wildlife Management plan has been submitted to Chief Wildlife Warden, Jharkhand, vide letter no 75(vivid)/ 940 dated 22.10.2008.

	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.	
23	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.	Progressive Mine closure plan and Final mine closure plan (part) has been approved by IBM. IMCP for entire lease will be prepared & submitted in due 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 of OB and Bauxite is being done in line with Calendar plan. Details of excavation, quantum of mineral; OB etc have been furnished for the financial year 2017-18. Detail 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 and regular monitoring is being done. Monitoring Reports of AAQ data is attached as Annexure-1.
4	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Monitoring Reports is attached 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.	Water tankers with sprinkling facility have been provided for haul roads, loading unloading & at transfer points.

6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of LEMM, etc. should be provided with ear plug muffs.	Complied. PPE provided to all operators within the work zone.
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 (L) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Presently, there is no generation of waste water from the 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. PPE provided to workers. Training is being provided through VJ centre. PME is being conducted for all workers.
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.	Complied. A suitable environmental management cell has been developed with qualified personal. 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.	This is an operating Mine and hence provision related to financial closure not applicable.
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.	The funds earmarked for environmental protection measures are kept in separate account. Cost of environmental protection measures Annexed as annexure-2.
12	The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed.

13	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests its Regional Office, Bhubneshwar CPCB and State Pollution Control Board.	Duly submitted.
14	A copy of clearance letter will be mailed to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
15	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Displayed.
16	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Already done and copies submitted with earlier six monthly compliance report.



Eco Ventures Pvt. Ltd.

Regd. Office: 237, Sarvapriya Vihar, Near IIT Gate, New Delhi - 110016
Corporate Office: 7/8 Bhaveshwar Bhavan, Opp Portuguese Church, Near Dadaival Uradhyay Garden,
Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370570 / 6672.
E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

ORSA & CHIRO PLATEAU- ENVIRONMENTAL MONITORING REPORT

JULY TO SEPTEMBER 2017

For Mahabal Enviro Engineers Pvt. Ltd.
For Mahabal Enviro Eng. Pvt. Ltd.


Vijay Pandey
Authorised Signatory
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

Hindalco Industries:

Environmental Monitoring Report

JULY - SEPTEMBER 2017

CONTENT

	LOCATION
	AMBIENT AIR QUALITY
1	Chirokukad Weigh Bridge
2	Kukad Village
3	Rajendrapur
4	Orsa Village
5	Near Chiro Kukud Mines Office
6	Near Saraidih Hospital
	SURFACE WATER
1	Chiro Kukad Mining Area





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PC – 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/OCT0141/2017-18

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: Chiro Kukad Weigh Bridge


Sample collected on: 21.09.2017

LOCATION / IDENTIFICATION: ChiroKukad Weigh Bridge

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	72.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	36.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	8.8
05.	Ammonia (NH ₃)	µg/m ³	400	14.2
06.	Ozone (O ₃)	µg/m ³	180	15.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.45
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	3.0
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	0.40

For Mahabal Enviro Engineers Pvt. Ltd.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay  Authorised Signatory
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834005.

Mobile No: +91 9431.102.102 / +91 9955.358.202.

E-mail: mahabalranchi@gmail.com

Hindalco Industries:

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0142/2017-18	Date: 24 th 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: Kukad Village	
Sample collected on: 21.09.2017	

LOCATION / IDENTIFICATION: Kukad Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	57.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	27.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	8.3
05.	Ammonia (NH ₃)	µg/m ³	400	12.7
06.	Ozone (O ₃)	µg/m ³	180	13.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.44
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	3.0
10.	Arsenic (As)	ng/m ³	06	2.1
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.42

For Mahabal Enviro Engineers Pvt. Ltd.

Authorised Signatory

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, PL - RMCC, District - Ranchi 834009.
Mobile No: +91 9431.102.102 / +91 9955.358.262.
E-mail: mahabalanranchi@gmail.com

Hindalco Industries:

Environmental Monitoring Report

JULY - SEPTEMBER 2017

Report no: MEEPL/OCT0143/2017-18	Date: 24 th 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: Rajendrapur	
Sample collected on: 21.09.2017	

LOCATION / IDENTIFICATION: Rajendrapur				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	50.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	24.0
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.0
05.	Ammonia (NH ₃)	µg/m ³	400	11.3
06.	Ozone (O ₃)	µg/m ³	180	14.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	2.1
10.	Arsenic (As)	ng/m ³	06	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.
For Mahabal Enviro Eng. Pvt. Ltd.


Authorised Signatory
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, PO - RMCC, District - Ranchi 834009
Mobile No: +91 9431.102.102 / +91 9955.358.262.
E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Environmental Monitoring Report **JULY - SEPTEMBER 2017**

Report no: MEEPL/OCT0144/2017-18 Date: 24th October, 2017

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client name: Hindalco Industries Limited

Client Address: Luhardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: Orsa Village

Sample collected on: 21.09.2017

LOCATION / IDENTIFICATION: Orsa Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	63.7
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	27.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	8.3
05.	Ammonia (NH ₃)	µg/m ³	400	13.9
06.	Ozone (O ₃)	µg/m ³	180	15.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.4
10.	Arsenic (As)	ng/m ³	06	2.0
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.35

For Mahabal Enviro Engineers Pvt. Ltd.
For Mahabal Enviro Eng. Pvt. Ltd.


Authorised Signatory
Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PC - 834009, 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/OCT0145/2017-18

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: Near ChiroKukud Mines Office

Sample collected on: 20.09.2017

LOCATION / IDENTIFICATION: Near Chiro Kukud Mines Office

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 μm) PM_{10}	$\mu\text{g}/\text{m}^3$	100	65.3
02.	Particulate Matter (size less than 2.5 μm) $\text{PM}_{2.5}$	$\mu\text{g}/\text{m}^3$	60	34.2
03.	Sulphur Dioxide (SO_2)	$\mu\text{g}/\text{m}^3$	80	5.5
04.	Nitrogen Dioxide (NO_2)	$\mu\text{g}/\text{m}^3$	80	8.3
05.	Ammonia (NH_3)	$\mu\text{g}/\text{m}^3$	400	13.6
06.	Ozone (O_3)	$\mu\text{g}/\text{m}^3$	180	14.5
07.	Carbon Monoxide (CO)	mg/m^3	02	0.46
08.	Lead (Pb)	$\mu\text{g}/\text{m}^3$	1.0	0.03
09.	Nickel (Ni)	ng/m^3	20	3.3
10.	Arsenic (As)	ng/m^3	06	2.1
11.	Benzene (C_6H_6)	$\mu\text{g}/\text{m}^3$	05	3.0
12.	Benzo (a) Pyrene	$\mu\text{g}/\text{m}^3$	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.
For Mahabal Enviro Eng. Pvt. Ltd.

Authorised Signatory
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, PO – F.M.C.C., 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/OCT0146/2017-18	Date: 24 th October, 2017
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835293	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on sample: Location: Near Saraidih Hospital	
Sample collected on: 20.09.2017	

LOCATION / IDENTIFICATION: Near Saraidih Hospital				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	56.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	8.3
05.	Ammonia (NH ₃)	µg/m ³	400	11.4
06.	Ozone (O ₃)	µg/m ³	180	14.9
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	2.7
10.	Arsenic (As)	ng/m ³	06	2.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.3
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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 – RMC, 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/OCT0147/2017-18

Date: 24th 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: Chiro Kukad Mining Area

Quantity: 5 L X 2 No: PVC Can

Sample collected on: 21.09.2017

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-b
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	--	8.1	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	480	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	54	200 max	APHA 22 nd Ed. 2012, 4500-Cl-G, 4-69
9	Alkalinity Total (as CaCO ₃)	mg/l	49	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	44	250 max	APHA 22 nd Ed. 2012, 4500-Cl-b, 4-72
11	Sulphate (as SO ₄)	mg/l	31.7	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 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	6.2	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84



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, 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

Continuation Sheet
MEEPL/OCT0147/2017-18

Report no: MEEPL/OCT0147/2017-18					Date: 24 th October, 2017
Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
14	Fluoride (as F)	mg/l	0.13	1 max	APHA 22 nd Ed. 2012, 4500-FP & D, 4-34, 4-37
15	Calcium (as Ca)	mg/l	13.3	75 max	APHA 22 nd Ed. 2012, 3500-Ca, 3-3-67
16	Iron (as Fe)	mg/l	0.10	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	7.3	7-8	APHA 20 th Ed. Method 4500- <i>o</i> g

For Mahabal Enviro Engineers Pvt. Ltd.
For Mahabal Enviro Eng. Pvt. Ltd.


Authorised Signatory
Vijay Pandey
SENIOR EXECUTIVE



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).

SI 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

Date: 03.04.17

Office Order

Environmental Cell has been re-constituted at Chiro Kukud Bauxite Mines (Area 152.57 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. Rajesh Ambastha (Coordinator)
2. Mr. Tapas Gachhayat (Member)
3. Mr. Satyendra Sharma –Foreman (Member)
4. Mr. Narendra Singh –Mining Mate (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)