



Ref No: HIL/LHD/GM (Geo)/MoEF/486

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 Jalim & Sanai 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-11015/138/2006-IA II (M) dated 10th April 2007**

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Jalim & Sanai 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

JALIM & SANAI BAUXITE MINES

Period: April 17 –September '17

J-11015/138/2006-iA.II (M) Dated 10.4.2007

Sl No	Conditions	Compliance Status
	Specific Conditions	
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	Implementation 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 & cabinet approval on recommendation of D.C. D.C is competent authority for diversion of agricultural land for non-agricultural use.
3	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.	Bauxite mining is being done at shallow depth in this mine also, hence at no point it will intersect the ground water table. Thus there will be no interference.
4	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 is obstructed during mining operation
5	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	It is being ensured & the top soil is being used for reclamation & rehabilitation of mined out areas. Details of land reclamation for the year 2017-18 is enclosed as Annexure.
6	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	Waste/OB generated is used in backfilling, data enclosed. Monitoring and management of rehabilitated areas continuing through supervision.

7.	<p>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 periodically after monsoon and maintained properly.</p> <p>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.</p>	<p>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.</p> <p>Catch drains, siltation ponds and Garland drain has been constructed and being maintained.</p>
8.	<p>Plantation shall be raised in an area of 10.58 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.</p>	<p>Progressive plantation is being done with advancement of mining operation. During 2017-18, around 200 saplings were planted. Rest to be complied during project period.</p>
9.	<p>The project proponent shall ensure that there shall be no discharge from the mine.</p>	<p>Ensured. There is no discharge from the mine.</p>
10.	<p>The project proponent shall carry out regular monitoring of spring discharge and its quality near Shrengdag village on long term basis.</p>	<p>The quality parameter of the nearby spring for off monsoon season has been monitored, report attached.</p>
11.	<p>The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p>A plan is drawn 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 his further suggestions. Recommendation of CGWB shall be implemented to augment the ground water resources of the area. Copy of letter already submitted. As of now, to augment the ground water resource measures like check dams, contour bunds, gullies are being taken of.</p>

12	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.
13	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Water is collected from rain water harvesting pond of Serengdag plateau. Water cess is being paid regularly to JSPCB. We are not using natural water bodies, ground water for mining purposes.
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.	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
15	Drills should either be operated with dust extractors or should be equipped with water injection system.	Drilling is done with water pouring in the holes intermittently for dust suppression.
16	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground 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.
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.
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. The sewage water from domestic uses is being collected through individual septic tanks & soak pits. Sullage is collected to an integrated soak pit. Arrangement has been made for Serengdag group of Mines.
19	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <i>Presbytis phayrei</i>	Action plan for conservation of flora and fauna spotted in the study area has been prepared based on discussions with forest Dept.

	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 allocated shall be included in the project. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	Action taken for conservation of flora and fauna as under: 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 is being done during day time.
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.	Progressive mine Closure Plan along with scheme of mining has been approved by IBM. FMCP (part) is also approved by the authority. FMCP for total lease area will be prepared 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 over burden & bauxite are within calendar plan. Details attached as Annexure for the financial year FY17-18.
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 has been fixed and regular monitoring is being done with available in-house facilities. 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 of AAQ data is attached as Annexure-1.

2	<p>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.</p>	<p>One no. of mobile water tanker with sprinkling facility have been provided along haul roads, loading unloading & at transfer points to arrest dust emissions.</p>
	<p>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.</p>	<p>Noise monitoring is done regularly. Workers engaged in operation of HEMM, etc. are provided with ear plug / muffs. Monitoring report enclosed as annexure 1.</p>
7	<p>Industrial waste water (workshops and water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 10th May, 1993 and 31st December, 1993 or as amended from time to time. Grease and grease trap should be installed before discharge of workshop effluents.</p>	<p>There is no effluent discharge from Mine. Discharge of Workshop effluents is being passed through Oil catchment pit to trap Oil and grease.</p>
8	<p>Personnel working in dusty areas should use 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.</p>	<p>Complied. Use of Personal Protective Equipment are provided & used by the individuals. we have well equipped hospital at Shrendag Plateau 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.</p>
9	<p>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.</p>	<p>Separate management cell is functioning with qualified in-house members. Copy enclosed.(Annexure-3)</p>
10	<p>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.</p>	<p>Provision related to financial closure is not applicable as this is an operating Mine.</p>
11	<p>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.</p>	<p>Statement of Budgetary provision & actual expenses for environmental protection measure is submitted. (Annexed-2).</p>

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.	Complied.
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, Regional Office, Lucknow, Central Pollution Control Board and State Pollution Control Board.	Discontinued.
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. Copy submitted to regional office.
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.	Complied.
16	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	Complied. Copy of paper cuttings containing advertisements is already submitted.



Annexure - 1
Eco Ventures Pvt. Ltd.

Regd. Office: 207, Sarvodaya Vihar, Near IT Daire, New Dehli - 110028
Corporate Office: 18 Bhuvneshwar Bhuvan, Opp. Portuguese Church, Near Dindaya Udayray Garden,
Godhale Road (North), Dada, West, Mumbai-400 026. Tel: +91 22 24770430 / 4477
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

SHERENDAG 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 & Sanal 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: 91-22-25823513 thanc@mahabal.com



Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, P.O – 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/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 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.

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/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.

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

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 Mines 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
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

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}	$\mu\text{g}/\text{m}^3$	100	50.2
02.	Particulate Matter (size less than 2.5 μm) $\text{PM}_{2.5}$	$\mu\text{g}/\text{m}^3$	60	24.7
03.	Sulphur Dioxide (SO_2)	$\mu\text{g}/\text{m}^3$	80	4.0
04.	Nitrogen Dioxide (NO_2)	$\mu\text{g}/\text{m}^3$	80	6.0
05.	Ammonia (NH_3)	$\mu\text{g}/\text{m}^3$	400	10.1
06.	Ozone (O_3)	$\mu\text{g}/\text{m}^3$	180	12.3
07.	Carbon Monoxide (CO)	mg/m^3	02	0.18
08.	Lead (Pb)	$\mu\text{g}/\text{m}^3$	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_6H_6)	$\mu\text{g}/\text{m}^3$	05	2.0
12.	Benzo (a) Pyrene	$\mu\text{g}/\text{m}^3$	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-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/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	µg/m ³	100	45.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	19.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.1
05.	Ammonia (NH ₃)	µg/m ³	400	11.3
06.	Ozone (O ₃)	µg/m ³	180	13.0
07.	Carbon Monoxide (CO)	mg/m ³	02	0.20
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	3.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, PO – RMCCG, 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/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- Sherengdag 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





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

At Booty, Near PHED Colony, Behind Pump House, P.O – RMCC District – Ranchi 834009.

Mobile No: +91 9431.102.102 / +91 9955.358.262.

E-mail: mahabala@ranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0127/2017-18

Date: 24th 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: *Sherengdag A 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	--	8.0	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	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-G, 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-so ₄ -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



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, P.O. – 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/OCT0127/2017-18

Report no: MEEPL/OCT0127/2017-18

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-FB & D, 4-84, 4-87
15	Calcium (as Ca)	mg/l	10.2	75 max	APHA 22 nd Ed. 2012, 3500-Ca B, 3-6*
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, 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



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 [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, P.O – RMCC, District – Ranchi 834009.

Mobile No: +91 9431.102.102 / +91 9965.358.262,

E-mail: mahabalranchi@gmail.com

Hindalco Industries :

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/AM/10128/2017-18

Date: 24 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 10): 1984, Reaffirmed 2006
8	Total hardness (as CaCO ₃)	mg/l	48	200 max	APHA 22 nd Ed. 2012, 4500-CO, 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-D, 4-72
11	Sulphate (as SO ₄)	mg/l	34.7	200 max	APHA 22 nd Ed. 2012, 4500-SO ₄ -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	6.3	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 Purno House, F.O – 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

Continuation Sheet
MEEPL/OCT0128/2017-18

Report no: 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	0.30	1 max	APHA 22 nd Ed. 2012, 4500-FI & D, 4-64, 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, 3111-B, 3-18
23	Selenium (as Se)	mg/l	N.D.	0.001 max	APHA 22 nd Ed. 2012, 3111-B, 3-23
24	Mercury (as Hg)	mg/l	N.D.	0.01 max	APHA 22 nd Ed. 2012, 3111-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-B	APHA 20 th Ed. Method 4500-o g

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

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)



A. Gangopadhyay

Date: 03.04.17

Office Order

Environmental Cell has been re-constituted at Jalim & Sanai Bauxite Mines (Area 12.14 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. Akhilesh Sinha -Asst. Manager - (Coordinator)
2. Mr. Avinash kumar – Foreman (Member)
3. Mr. Satyendra Tiwari –Mining Mate (Member)

Basudev Gangopadhyay
Convenor (Quality & Environment)

ANNEXURE -4

PRODUCTION, MINED OUT, BACK FILLED, 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	148279.00	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)
Convener (Quality & Environment)