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Mahabal Enviro Engineers Pvt. Ltd.

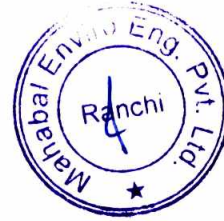
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

ORSA & CHIRO PLATEAU- ENVIRONMENTAL MONITORING REPORT

JULY TO SEPTEMBER 2017

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


Authorised Signatory
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,

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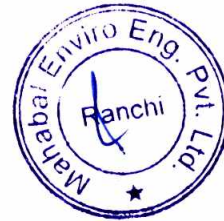
Hindalco Industries:

Environmental Monitoring Report

JULY – SEPTEMBER 2017

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5	Near Chiro Kukud Mines Office
6	Near Saraidih Hospital
	SURFACE WATER
1	Chiro Kukad Mining Area





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Hindalco Industries:

Environmental Monitoring Report

JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0141/2017-18	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: 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.

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Authorised Signatory
Vijay Kumar
SENIOR EXECUTIVE





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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

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Vijay Pandey

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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.
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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: Lohardaga	
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.
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Environmental Monitoring Report

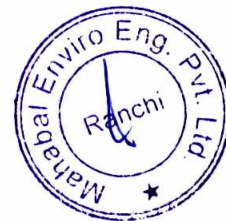
JULY – SEPTEMBER 2017

Report no: MEEPL/OCT0145/2017-18	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: 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	µg/m ³	100	65.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.2
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	13.6
06.	Ozone (O ₃)	µg/m ³	180	14.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.46
08.	Lead (Pb)	µg/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 ₆ H ₆)	µg/m ³	05	3.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

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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: 835203	
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

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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, 2-6
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	--	8.1	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-CI-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-CIG, 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-CI-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





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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-FB & D, 4-84, 4-87
15	Calcium (as Ca)	mg/l	13.3	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 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-o g.

For Mahabal Enviro Engineers Pvt. Ltd.
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