

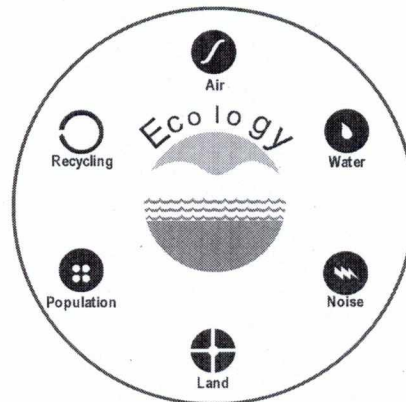
Job No.750001

**Environmental Monitoring Report
Of
Ib Valley Area
For
April- 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi]

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TABLE--

EFFLUENT QUALITY DATA

Area :

IB Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Central Hospital

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Tap Discharge Water of Central Hospital	7.78	<4.0	26	16		

Project :

Lajkura OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Outlet of MDTP	3.42	<4.0	48	28		
10-Apr-21	STP Outlet	6.96		34		<2.0	
21-Apr-21	Outlet of MDTP	3.59	<4.0	56	36		
27-Apr-21	STP Outlet	6.90		38		<2.0	

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Outlet of Orampada Sump	6.92	<4.0	20	12		
10-Apr-21	STP Outlet	7.01		22		<2.0	
10-Apr-21	Outlet of Sedimentation Pond	7.95	<4.0	16	12		
21-Apr-21	Outlet of Sedimentation Pond	7.88	<4.0	22	16		
27-Apr-21	STP Outlet	7.08		32		<2.0	

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge	5.5-9.0	10	100	250	30
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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

PROJECT :

Samleswari OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Apr-21	West of the Mine	66.3	62.1
03-Apr-21	South of the Mine	64.2	63.1
03-Apr-21	Rampur Sub Area	66.8	64.3
03-Apr-21	Khokelmal (Reported Only)	63.7	60.4
03-Apr-21	South-East of the Mine	64.2	63.1
03-Apr-21	East of the Mine	63.7	58.8
20-Apr-21	West of the Mine	66.3	64.2
20-Apr-21	South of the Mine	63.7	58.6
20-Apr-21	Rampur Sub Area	64.6	59.6
20-Apr-21	Khokelmal (Reported Only)	64.9	57.6
20-Apr-21	South-East of the Mine	65.9	62.2
20-Apr-21	East of the Mine	66.6	64.9

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6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)



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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

PROJECT :

Lajkura OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Apr-21	Khokelmal	63.7	60.4
03-Apr-21	Near Project Office	66.8	63.2
03-Apr-21	Near South Coal Stock	65.6	62.1
03-Apr-21	North of Mine	64.3	57.7
20-Apr-21	Khokelmal	64.9	57.6
20-Apr-21	Near Project Office	63.2	58.6
20-Apr-21	Near South Coal Stock	64.6	61.3
20-Apr-21	North of Mine	66.7	62.5


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MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)


10.00 PM -6.00 AM
Leq 70dB(A)

 <p>cmpdi A Mini Ratna Company</p>	<p>AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)</p> <p>Area: IB Valley</p>
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<i>Project</i>	Lajkura OCP			
<i>Monitoring Station</i>	Khokelmal			
<i>Date of sampling</i>	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)
07-Apr-21	4.01	<0.1	<1.0	<1.0
08-Apr-21	4.12	<0.1	<1.0	<1.0
14-Apr-21	3.98	<0.1	<1.0	<1.0
15-Apr-21	3.86	<0.1	<1.0	<1.0
21-Apr-21	3.12	<0.1	<1.0	<1.0
22-Apr-21	3.19	<0.1	<1.0	<1.0
26-Apr-21	3.10	<0.1	<1.0	<1.0
27-Apr-21	3.24	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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 cmpdi <i>A Mini Ratna Company</i>	AMBIENT AIR QUALITY DATA (NAAQS PARAMETER) Area: IB Valley
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Project	Samleswari OCP			
Monitoring Station	Rampur Sub Area			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Apr-21	2.86	<0.1	<1.0	<1.0
08-Apr-21	2.78	<0.1	<1.0	<1.0
14-Apr-21	2.80	<0.1	<1.0	<1.0
15-Apr-21	2.81	<0.1	<1.0	<1.0
21-Apr-21	2.98	<0.1	<1.0	<1.0
22-Apr-21	2.89	<0.1	<1.0	<1.0
27-Apr-21	2.96	<0.1	<1.0	<1.0
28-Apr-21	2.91	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Project	Samleswari OCP			
Monitoring Station	Khokelmal (Reported Only)			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Apr-21	4.01	<0.1	<1.0	<1.0
08-Apr-21	4.12	<0.1	<1.0	<1.0
14-Apr-21	3.98	<0.1	<1.0	<1.0
15-Apr-21	3.86	<0.1	<1.0	<1.0
21-Apr-21	3.12	<0.1	<1.0	<1.0
22-Apr-21	3.19	<0.1	<1.0	<1.0
26-Apr-21	3.10	<0.1	<1.0	<1.0
27-Apr-21	3.24	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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AMBIENT AIR QUALITY DATA

Area :

Ib Valley

(Reference Station)

Project :

Samleswari OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Apr-21	Rampur Sub Area	185	78	44	17.40	36.12	Coal Stock And CT Road	About 900m
07-Apr-21	Khokelmal (Reported Only)	201	81	46	14.83	28.41	Railway siding	About 1000m FromSiding
08-Apr-21	Rampur Sub Area	196	73	49	17.89	36.59	Coal Stock And CT Road	About 900m
08-Apr-21	Khokelmal (Reported Only)	214	78	49	15.06	29.24	Railway siding	About 1000m FromSiding
14-Apr-21	Khokelmal (Reported Only)	222	84	50	15.27	29.79	Railway siding	About 1000m FromSiding
14-Apr-21	Rampur Sub Area	178	77	47	16.73	35.75	Coal Stock And CT Road	About 900m
15-Apr-21	Khokelmal (Reported Only)	208	92	53	14.71	28.16	Railway siding	About 1000m FromSiding
15-Apr-21	Rampur Sub Area	198	85	51	18.27	37.64	Coal Stock And CT Road	About 900m
21-Apr-21	Rampur Sub Area	134	65	37	13.81	25.67	Coal Stock And CT Road	About 900m
21-Apr-21	Khokelmal (Reported Only)	187	81	43	16.14	31.72	Railway siding	About 1000m FromSiding
22-Apr-21	Khokelmal (Reported Only)	170	87	48	13.42	25.61	Railway siding	About 1000m FromSiding
22-Apr-21	Rampur Sub Area	149	74	39	13.24	25.16	Coal Stock And CT Road	About 900m
26-Apr-21	Khokelmal (Reported Only)	148	70	41	11.67	21.43	Railway siding	About 1000m FromSiding
27-Apr-21	Khokelmal (Reported Only)	189	73	37	11.48	20.17	Railway siding	About 1000m FromSiding
27-Apr-21	Rampur Sub Area	186	86	44	12.73	24.51	Coal Stock And CT Road	About 900m
28-Apr-21	Rampur Sub Area	174	90	49	15.26	29.73	Coal Stock And CT Road	About 900m

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*NAAQS,2009

	100	60	80	80
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AMBIENT AIR QUALITY DATA

Area : **Ib Valley**

(Reference Station)

Project :

Lajkura OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Apr-21	Khokelmal	201	81	46	14.83	28.41	Railway siding	About 1000m FromSiding
08-Apr-21	Khokelmal	214	78	49	15.06	29.24	Railway siding	About 1000m FromSiding
14-Apr-21	Khokelmal	222	84	50	15.27	29.79	Railway siding	About 1000m FromSiding
15-Apr-21	Khokelmal	208	92	53	14.71	28.16	Railway siding	About 1000m FromSiding
21-Apr-21	Khokelmal	187	81	43	16.14	31.72	Railway siding	About 1000m FromSiding
22-Apr-21	Khokelmal	170	87	48	13.42	25.61	Railway siding	About 1000m FromSiding
26-Apr-21	Khokelmal	148	70	41	11.67	21.43	Railway siding	About 1000m FromSiding
27-Apr-21	Khokelmal	189	73	37	11.48	20.17	Railway siding	About 1000m FromSiding

*NAAQS,2009		100	60	80	80
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AMBIENT AIR QUALITY DATA

Area :

Ib Valley

(Compliance Station)

Project :

Lajkura OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
12-Apr-21	North of the Mine	349	182	67	16.73	34.27	Mining Activity	About 500m
12-Apr-21	Near South Coal Stock	447	232	72	19.25	40.45	Mining Activities, Coal Transportation	About 500m
12-Apr-21	Near Project Office	415	238	68	19.73	39.16	Domestic, OCP, Transportation	About 500m
24-Apr-21	North of the Mine	289	142	56	14.57	27.38	Mining Activity	About 500m
24-Apr-21	Near South Coal Stock	377	183	59	16.82	32.41	Mining Activities, Coal Transportation	About 500m
24-Apr-21	Near Project Office	346	179	54	16.41	31.57	Domestic, OCP, Transportation	About 500m

Project :

Samleswari OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
06-Apr-21	West of the Mine	426	241	68	16.57	34.29	Distance From 'y' Curve Railway Siding	About 450m
06-Apr-21	South of the Mine	234	91	51	21.60	39.72	Mine Haul Roads	About 400m
10-Apr-21	South-East of the Mine	476	235	73	19.46	39.68	Coal Transportation Road	About 500m
10-Apr-21	East of the Mine	188	80	47	14.61	28.27	Coal Transportation Road	About 500m
17-Apr-21	South of the Mine	317	181	64	15.37	30.16	Mine Haul Roads	About 400m
19-Apr-21	South-East of the Mine	360	208	67	16.52	33.54	Coal Transportation Road	About 500m
23-Apr-21	West of the Mine	369	187	61	16.84	33.71	Distance From 'y' Curve Railway Siding	About 450m
26-Apr-21	East of the Mine	391	236	73	17.68	34.63	Coal Transportation Road	About 500m

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120

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TABLE--

EFFLUENT QUALITY DATA

Area :

Ib Valley

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Mine Sump Water	6.74	<4.0	36	40		

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TABLE--

EFFLUENT QUALITY DATA

Area :


Ib Valley

(All dimensions are in mg/l unless otherwise stated except pH)


Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
21-Apr-21	Mine Sump Water	6.74	<4.0	28	40		


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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Well Water From Kudopali	Tap Water From Samleswari OCP Colony		
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.34	7.04	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	104	108	200	600
Total Hardness (Ca CO ₃)(mg/L)	104	92	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	24	28	250	1000
Total Dissolve Solid(mg/L)	202	204	500	2000
Calcium(mg/L)	33.67	30.46	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	9.46	5.97	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.06	0.09	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data IB Valley Area

Project / OCP	Samleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Water from IWSS, IB Valley Area	Well Water From Lajkura		
Monitoring Station				
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	3	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	7.02	7.05	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	108	108	200	600
Total Hardness (Ca CO ₃)(mg/L)	108	104	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	26	26	250	1000
Total Dissolve Solid(mg/L)	206	208	500	2000
Calcium(mg/L)	22.44	22.44	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	6.53	8.74	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.10	0.15	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Madhuban Nagar Well Water	Adarsh Nagar Colony Well Water		
Monitoring Station				
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	1	5
pH	6.89	7.03	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	52	72	200	600
Total Hardness (Ca CO ₃)(mg/L)	120	96	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	60	20	250	1000
Total Dissolve Solid(mg/L)	192	162	500	2000
Calcium(mg/L)	17.64	19.24	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	7.64	16.25	200	400
Nitrate(mg/L)	4.47	1.11	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.05	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualiberna Village Well Water	VIP Guest House Tap Water		
Monitoring Station				
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	6.99	7.21	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	44	84	200	600
Total Hardness (Ca CO₃)(mg/L)	68	104	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	26	24	250	1000
Total Dissolve Solid(mg/L)	138	196	500	2000
Calcium(mg/L)	22.44	25.65	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	25.28	26.53	200	400
Nitrate(mg/L)	11.02	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	0.10	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Samaleswari

Samlaeswari Air monitoring stations 2021



Lajkura

Lajkura Air monitoring stations 2021



Job No.750001

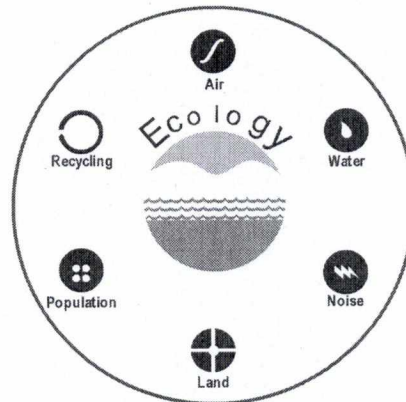
**Environmental Monitoring Report
Of
Lakhanpur Area
For
April- 2021**

Ib Valley Coalfield



MCL

Mahanadi Coalfields Limited



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A Mini Ratna Company

Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi]

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Lakhanpur

(Compliance Station)

Project :

Lilari OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
01-Apr-21	Near Lilari Magazine House	273	149	55	13.48	25.64	Coal Transportation	About 500m
17-Apr-21	Near Lilari Magazine House	219	136	47	14.46	27.51	Coal Transportation	About 500m

24/9/21
 O. I. C.
 Env. Lab
 CMPDI, RI-VII
 Bhubaneswar

Sathwik
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 CMPDI, RI-VII, LAB
 BHUBANESWAR

MoEF Standards Notification dated 25th
 September, 2000

600

300

120

120



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A Miniratna Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Lakhanpur

(Compliance Station)

Project :

Belpahar OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
07-Apr-21	Near Magazine House	277	184	53	13.48	25.73	Mining Activities	About 500m
21-Apr-21	Near Magazine House	297	167	52	13.67	25.13	Mining Activities	About 500m

Project :

Lakhanpur OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
03-Apr-21	Near Quarry 3	275	182	55	14.29	27.81	Coal Stockyard, Surface Bunker, Coal Transport	About 500m
03-Apr-21	Near Lilari Nallah Pump House	233	154	48	13.84	26.75	Mining Activities	About 500m
19-Apr-21	Near Lilari Nallah Pump House	177	94	39	10.65	20.04	Mining Activities	About 500m
28-Apr-21	Near Quarry 3	271	155	57	13.52	25.63	Coal Stockyard, Surface Bunker, Coal Transport	About 500m

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500

250

120

120



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A Bharat Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Lakhanpur

(Compliance Station)

Project :

Belpahar OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO ₂	NO _x	Dust Generating Source	Distance from DGS
03-Apr-21	Near Central Workshop	378	218	61	15.72	31.48	Mining Activities	About 500m
20-Apr-21	Near Central Workshop	346	188	52	15.38	30.49	Mining Activities	About 500m

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MoEF Standards Notification dated 25th September, 2000

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Lakhanpur

(Reference Station)

Project :

Belpahar OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Apr-21	South of the Mine	221	79	45	21.27	39.53	Mining Activities, Coal Transportation	About 500m
02-Apr-21	South of the Mine	208	83	48	20.83	38.81	Mining Activities, Coal Transportation	About 500m
06-Apr-21	East of the Mine	203	78	50	15.83	29.61	Mining Activities	About 500m
07-Apr-21	East of the Mine	208	90	53	16.40	30.48	Mining Activities	About 500m
08-Apr-21	South of the Mine	211	73	49	20.18	38.26	Mining Activities, Coal Transportation	About 500m
09-Apr-21	South of the Mine	219	73	42	20.59	38.69	Mining Activities, Coal Transportation	About 500m
13-Apr-21	East of the Mine	203	82	45	15.62	29.41	Mining Activities	About 500m
14-Apr-21	East of the Mine	193	85	48	14.86	28.62	Mining Activities	About 500m
15-Apr-21	South of the Mine	203	67	47	19.97	38.05	Mining Activities, Coal Transportation	About 500m
16-Apr-21	South of the Mine	222	89	46	17.25	33.28	Mining Activities, Coal Transportation	About 500m
20-Apr-21	East of the Mine	169	78	43	12.63	24.71	Mining Activities	About 500m
21-Apr-21	East of the Mine	205	91	52	14.79	27.53	Mining Activities	About 500m
22-Apr-21	South of the Mine	237	97	53	17.63	33.41	Mining Activities, Coal Transportation	About 500m
23-Apr-21	South of the Mine	194	81	49	16.82	32.65	Mining Activities, Coal Transportation	About 500m
26-Apr-21	East of the Mine	191	86	50	13.58	25.97	Mining Activities	About 500m
27-Apr-21	East of the Mine	182	79	42	13.21	25.36	Mining Activities	About 500m
28-Apr-21	South of the Mine	179	68	40	16.41	32.47	Mining Activities, Coal Transportation	About 500m
29-Apr-21	South of the Mine	172	75	47	16.25	32.14	Mining Activities, Coal Transportation	About 500m

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Lakhanpur

(Reference Station)

Project :

Lakhanpur OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Apr-21	South West of Quarry 6	206	81	49	15.41	30.72	Mining Activities	About 500m
07-Apr-21	South of Quarry 6	192	74	39	14.63	28.19		
08-Apr-21	South of Quarry 6	204	82	43	16.28	30.83		
08-Apr-21	South West of Quarry 6	219	77	46	17.64	32.81	Mining Related Activities	About 500m
14-Apr-21	South of Quarry 6	189	87	49	15.72	28.40		
14-Apr-21	South West of Quarry 6	196	85	51	15.16	31.27	Mining Related Activities	About 500m
15-Apr-21	South West of Quarry 6	218	89	48	17.26	31.79	Mining Related Activities	About 500m
15-Apr-21	South of Quarry 6	209	92	52	16.69	31.57		
21-Apr-21	South West of Quarry 6	163	87	44	12.46	23.57	Mining Related Activities	About 500m
21-Apr-21	South of Quarry 6	153	66	38	12.34	24.19		
22-Apr-21	South West of Quarry 6	204	90	51	14.68	27.94	Mining Related Activities	About 500m
22-Apr-21	South of Quarry 6	172	79	43	12.68	24.51		
27-Apr-21	South West of Quarry 6	188	83	47	13.15	25.72	Mining Related Activities	About 500m
27-Apr-21	South of Quarry 6	201	86	50	13.92	25.84		
28-Apr-21	South West of Quarry 6	167	95	40	12.73	23.86	Mining Related Activities	About 500m
28-Apr-21	South of Quarry 6	184	81	46	13.71	25.42		

Signature

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP			
Monitoring Station	South of Quarry 6			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Apr-21	2.45	<0.1	<1.0	<1.0
08-Apr-21	2.48	<0.1	<1.0	<1.0
14-Apr-21	2.52	<0.1	<1.0	<1.0
15-Apr-21	2.48	<0.1	<1.0	<1.0
21-Apr-21	3.26	<0.1	<1.0	<1.0
22-Apr-21	3.29	<0.1	<1.0	<1.0
27-Apr-21	3.24	<0.1	<1.0	<1.0
28-Apr-21	3.21	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP			
Monitoring Station	South West of Quarry 6			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Apr-21	3.76	<0.1	<1.0	<1.0
08-Apr-21	3.80	<0.1	<1.0	<1.0
14-Apr-21	3.84	<0.1	<1.0	<1.0
15-Apr-21	3.89	<0.1	<1.0	<1.0
21-Apr-21	2.33	<0.1	<1.0	<1.0
22-Apr-21	2.86	<0.1	<1.0	<1.0
27-Apr-21	2.81	<0.1	<1.0	<1.0
28-Apr-21/	2.89	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

SA/SW

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Belpahar OCP			
Monitoring Station	East of the Mine			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
06-Apr-21	2.84	<0.1	<1.0	<1.0
07-Apr-21	2.76	<0.1	<1.0	<1.0
13-Apr-21	2.34	<0.1	<1.0	<1.0
14-Apr-21	2.89	<0.1	<1.0	<1.0
20-Apr-21	3.32	<0.1	<1.0	<1.0
21-Apr-21	3.37	<0.1	<1.0	<1.0
26-Apr-21	3.29	<0.1	<1.0	<1.0
27-Apr-21	3.39	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

roject	Belpahar OCP			
Monitoring Station	South of the Mine			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
01-Apr-21	3.01	<0.1	<1.0	<1.0
02-Apr-21	3.12	<0.1	<1.0	<1.0
08-Apr-21	3.20	<0.1	<1.0	<1.0
09-Apr-21	3.24	<0.1	<1.0	<1.0
15-Apr-21	3.32	<0.1	<1.0	<1.0
16-Apr-21	3.48	<0.1	<1.0	<1.0
22-Apr-21	3.56	<0.1	<1.0	<1.0
23-Apr-21	3.51	<0.1	<1.0	<1.0
28-Apr-21	3.54	<0.1	<1.0	<1.0
29-Apr-21	3.59	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

Belpahar OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Apr-21	Near Central Workshop	66.7	63.2
06-Apr-21	Near Magazine House	64.4	63.2
06-Apr-21	South of the Mine	67.6	60.4
06-Apr-21	East of the Mine	63.2	59.8
23-Apr-21	East of the Mine	60.3	57.7
23-Apr-21	South of the Mine	62.1	58.3
23-Apr-21	Near Central Workshop	68.4	63.5
23-Apr-21	Near Magazine House	64.7	60.3

PROJECT :

Lakhanpur OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Apr-21	South West of Quarry 6	62.6	58.7
06-Apr-21	South of Quarry 6	64.3	62.1
06-Apr-21	Near Quarry 3	62.1	56.3
06-Apr-21	Near Lilari Nallah Pump House	63.2	59.6
23-Apr-21	Near Lilari Nallah Pump House	64.7	61.4
23-Apr-21	Near Quarry 3	62.1	58.8
23-Apr-21	South of Quarry 6	64.5	59.2
23-Apr-21	South West of Quarry 6	62.6	56.8

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)

O.I.C.

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Bhubaneswar**

Tattarick
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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

Lilari OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Apr-21	Near Lilari Magazine House	64.8	57.7
23-Apr-21	Near Lilari Magazine House	66.6	63.2

S. J. S. M.
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Fattanaik

MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)



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TABLE--

EFFLUENT QUALITY DATA

Area :

Lakhanpur

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Belpahar OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Clear Water Tank of Sewage Treatment Plant	6.52		34		<2.0	
12-Apr-21	Clear Water Tank of MDTP	6.44	<4.0	54	36		
12-Apr-21	Outlet of ETP	6.46	<4.0	56	32		
12-Apr-21	Inlet of ETP	6.35	<4.0	38	32		
12-Apr-21	ECO Tank	6.72	<4.0	34	56		
12-Apr-21	Mine Sump Water	6.22	<4.0	34	28		
23-Apr-21	Clear Water Tank of MDTP	6.54	<4.0	44	28		
27-Apr-21	Clear Water Tank of Sewage Treatment Plant	-		-		-	Dry

Project :

Lakhanpur OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
12-Apr-21	O & G Trap Inlet	5.77	<4.0	46	32		
12-Apr-21	Mine Sump Water	6.45	<4.0	40	48		
12-Apr-21	Outlet of Secondary Sedimentation Tank	6.24	<4.0	46	28		
12-Apr-21	O & G Trap Outlet	5.97	<4.0	38	28		
12-Apr-21	Inlet of Secondary Sedimentation Tank	6.05	<4.0	54	40		
23-Apr-21	Mine Sump Water	6.52	<4.0	44	52		
23-Apr-21	Outlet of Secondary Sedimentation Tank	6.39	<4.0	40	24		

Project :

Lilari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
12-Apr-21	Mine Sump Water	6.71	<4.0	38	20		

S. K. Mohapatra
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Drinking Water Quality Data Lakhanpur Area

Project / OCP	Lakhanpur OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	LKP Canteen Tap Water	Acceptable	Permissible
Date of Sampling	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	5
pH	7.60	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	64	200	600
Total Hardness (Ca CO ₃)(mg/L)	76	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	16	250	1000
Total Dissolve Solid(mg/L)	140	500	2000
Calcium(mg/L)	22.44	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	15.56	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Drinking Water Quality Data Lakhanpur Area

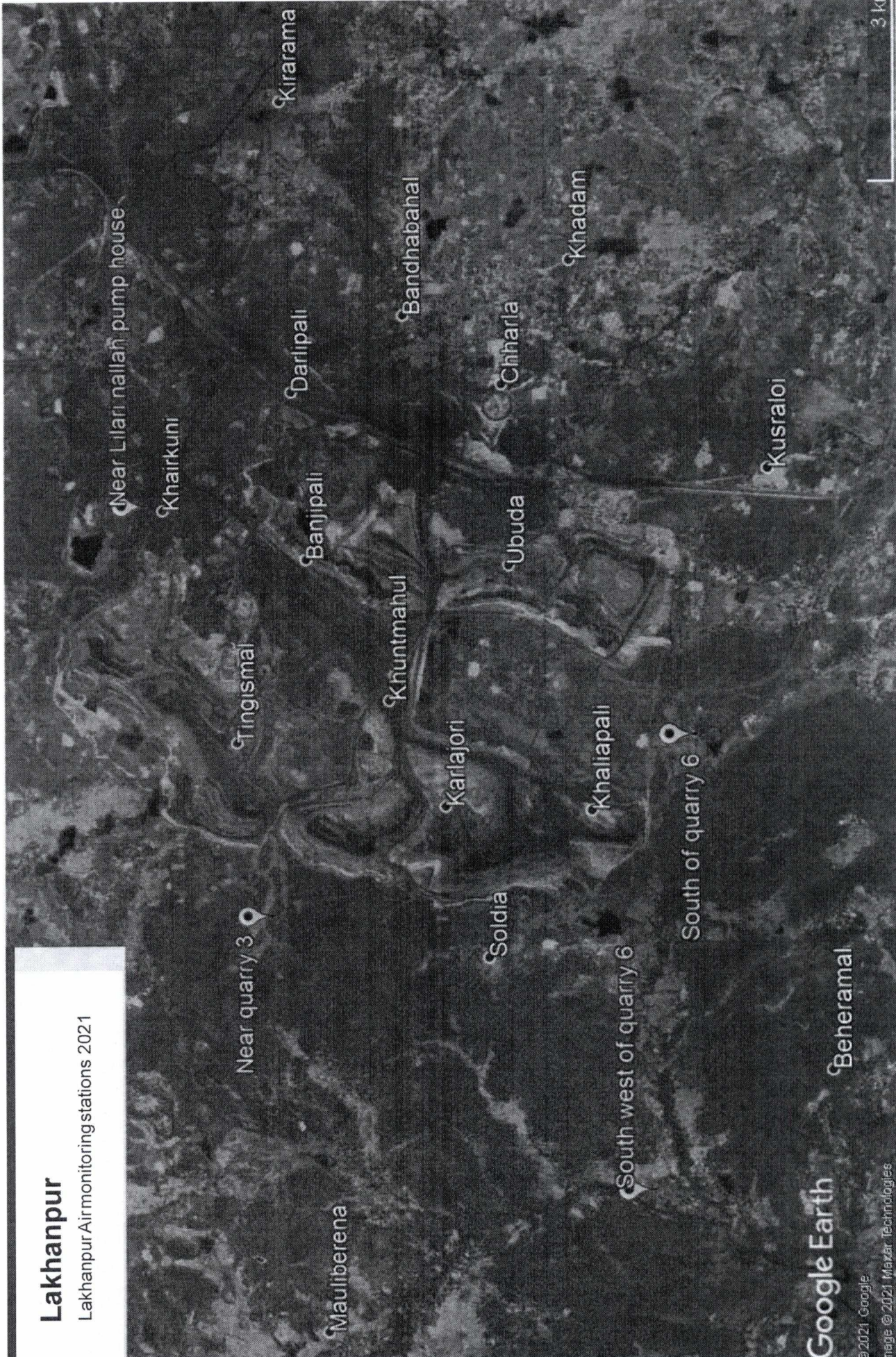
Project / OCP	Belpahar OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	IWSS Outlet	Acceptable	Permissible
Date of Sampling	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	5
pH	7.58	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	64	200	600
Total Hardness (Ca CO ₃)(mg/L)	76	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	18	250	1000
Total Dissolve Solid(mg/L)	138	500	2000
Calcium(mg/L)	19.24	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	15.69	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Lakhanpur

Lakhanpur Air monitoring stations 2021



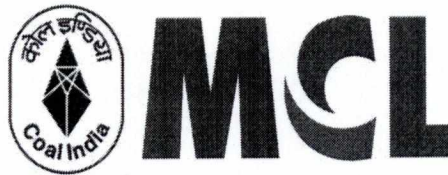


Belpahar
Belpahar Air monitoring stations 2021

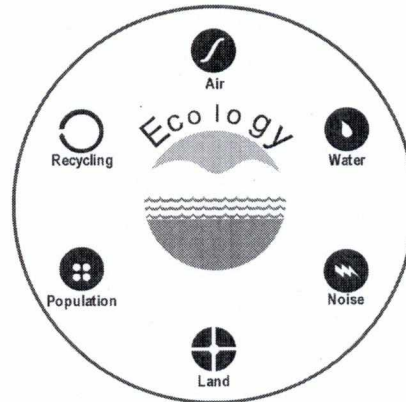
Job No.750001

**Environmental Monitoring Report
Of
Mahalaxmi Area
For
April- 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



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A Mini Ratna Company

Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi]

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A Mittal Metals Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Compliance Station)

Project :

Basundhara (w) OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
01-Apr-21	West of Coal Stock	413	188	67	19.25	39.74	Mining Activities, OCP, Transportation	About 500m
01-Apr-21	South West of Working Face Gopalpur Village, Near CMPDI Camp	439	227	65	19.81	39.87	Mining Activity	About 500m
01-Apr-21	North of the Sardega Railway Siding	374	218	63	16.59	33.81	Mining Activities, OCP, Coal Transportation	About 500m
16-Apr-21	North of the Sardega Railway Siding	352	197	54	15.31	31.10	Mining Activities, OCP, Coal Transportation	About 500m
17-Apr-21	West of Coal Stock	365	166	59	15.79	31.58	Mining Activities, OCP, Transportation	About 500m
19-Apr-21	South West of Working Face Gopalpur Village, Near CMPDI Camp	357	172	71	15.48	31.23	Mining Activity	About 500m

[Signature]
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Env. Lab
CMPDI, RI-VII
Bhubaneswar

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MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Reference Station)

Project :


Basundhara (w) OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)


Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
01-Apr-21	Sarangijharia Community Centre	199	82	50	14.13	29.16	Domestic	
02-Apr-21	Sarangijharia Community Centre	221	76	48	14.61	29.58	Domestic	
08-Apr-21	Sarangijharia Community Centre	180	69	45	13.64	27.62	Domestic	
09-Apr-21	Sarangijharia Community Centre	198	78	52	15.37	28.49	Domestic	
15-Apr-21	Sarangijharia Community Centre	172	88	50	13.58	27.37	Domestic	
16-Apr-21	Sarangijharia Community Centre	157	65	38	11.69	21.94	Domestic	
22-Apr-21	Sarangijharia Community Centre	185	80	45	12.73	24.68	Domestic	
23-Apr-21	Sarangijharia Community Centre	205	87	49	13.51	26.17	Domestic	
28-Apr-21	Sarangijharia Community Centre	175	88	44	12.64	24.23	Domestic	
29-Apr-21	Sarangijharia Community Centre	213	90	50	13.87	26.49	Domestic	


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 cmpdi <i>A Mini Ratna Company</i>	AMBIENT AIR QUALITY DATA (NAAQS PARAMETER) Area: Mahalaxmi
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Project	Basundhara (W) OCP			
Monitoring Station	Sarangijharia Community Centre			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	<i>(µg/m³)</i>	<i>(µg/m³)</i>	<i>(ng/m³)</i>	<i>(ng/m³)</i>
01-Apr-21	4.11	<0.1	<1.0	<1.0
02-Apr-21	4.16	<0.1	<1.0	<1.0
08-Apr-21	4.22	<0.1	<1.0	<1.0
09-Apr-21	4.18	<0.1	<1.0	<1.0
15-Apr-21	4.16	<0.1	<1.0	<1.0
16-Apr-21	2.61	<0.1	<1.0	<1.0
22-Apr-21	2.68	<0.1	<1.0	<1.0
23-Apr-21	2.63	<0.1	<1.0	<1.0
28-Apr-21	2.57	<0.1	<1.0	<1.0
29-Apr-21	2.65	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Mahalaxmi

PROJECT :

Basundhara (W) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
08-Apr-21	Sarangijharia Community Centre	64.6	59.9
08-Apr-21	South-West of Working Face	62.2	58.7
08-Apr-21	West of Coal Stock	63.2	59.8
08-Apr-21	North of the Sardega Railway Siding	63.3	60.7
27-Apr-21	Sarangijharia Community Centre	63.6	58.8
27-Apr-21	South-West of Working Face	64.7	60.2
27-Apr-21	West of Coal Stock	66.5	58.7
27-Apr-21	North of the Sardega Railway Siding	64.3	62.1

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MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)



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TABLE--

EFFLUENT QUALITY DATA

Area :

Mahalaxmi

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Basundhara (W) OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Apr-21	M1-Basundhara (E) OCP's Sump	6.96	<4.0	24	12		
27-Apr-21	M1-Basundhara (E) OCP's Sump	7.04	<4.0	28	16		

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Drinking Water Quality Data Mahalaxmi Area

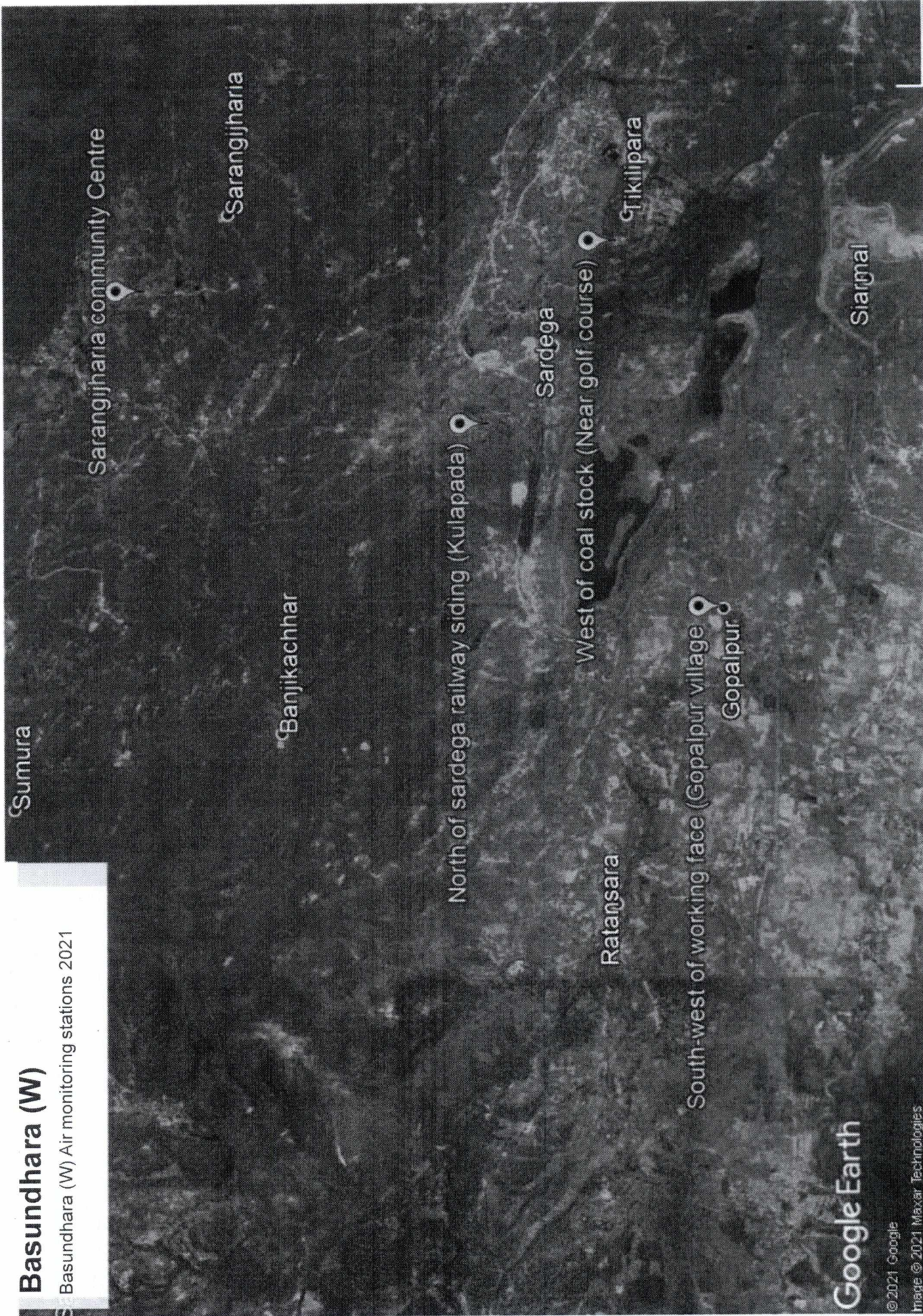
Project / OCP	Basundhara OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Water Treatment Plant Clear Water Reservoir		
Date of Sampling	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	1	5
pH	7.05	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	20	200	600
Total Hardness (Ca CO ₃)(mg/L)	168	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	14	250	1000
Total Dissolve Solid(mg/L)	302	500	2000
Calcium(mg/L)	40.08	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	14.92	200	400
Nitrate(mg/L)	3.26	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Basundhara (W)

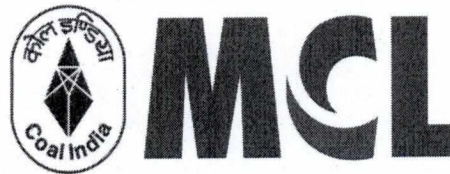
Basundhara (W) Air monitoring stations 2021



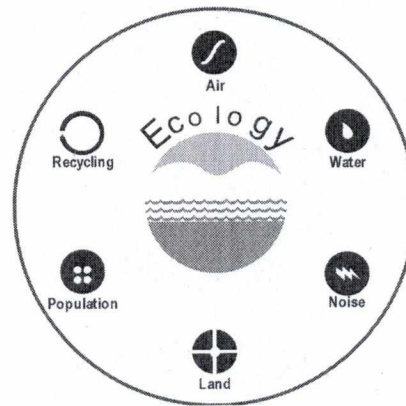
Job No.750001

**Environmental Monitoring Report
Of
Basundhara Area
For
April- 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



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Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi]

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Compliance Station)

Project :

Garjanbahal OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
05-Apr-21	South West of Coal Face	379	193	61	13.72	26.41	Mining Activity	About 500m
05-Apr-21	Near Coal Sampling Lab	189	88	47	13.37	24.62	Railway Siding, Transportation	About 500m
05-Apr-21	220 KV Substation	344	204	53	12.51	23.87	C.T Road, Mining	About 350m
22-Apr-21	220 KV Substation	281	143	51	16.26	31.29	C.T Road, Mining	About 350m
30-Apr-21	South West of Coal Face	286	161	54	16.42	31.57	Mining Activity	About 500m
30-Apr-21	Near Coal Sampling Lab	180	85	43	12.47	23.59	Railway Siding, Transportation	About 500m

Project :

Kulda OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
02-Apr-21	External CT Road	306	172	52	14.56	27.62	Mining Activities, Coal Transportation	About 500m
20-Apr-21	External CT Road	279	165	55	15.48	29.71	Mining Activities, Coal Transportation	About 500m

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

Project :

Garjanbahal OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
05-Apr-21	North West of Working Face (Tumulia)	217	89	52	13.84	28.75	Mining Activities	About 1000m
05-Apr-21	Kaletpani Village	208	77	42	11.89	23.46	Mining Activities	About 2500m
06-Apr-21	North West of Working Face (Tumulia)	194	78	46	13.23	27.58	Mining Activities	About 1000m
06-Apr-21	Kaletpani Village	237	88	48	12.68	24.19	Mining Activities	About 2500m
12-Apr-21	North West of Working Face (Tumulia)	233	88	49	14.86	29.82	Mining Activities	About 1000m
12-Apr-21	Kaletpani Village	223	92	53	12.27	23.85	Mining Activities	About 2500m
13-Apr-21	North West of Working Face (Tumulia)	225	79	51	14.62	29.57	Mining Activities	About 1000m
13-Apr-21	Kaletpani Village	231	87	50	13.49	25.64	Mining Activities	About 2500m
19-Apr-21	Kaletpani Village	146	80	45	10.82	20.46	Mining Activities	About 2500m
19-Apr-21	North West of Working Face (Tumulia)	236	93	52	15.27	29.64	Mining Activities	About 1000m
20-Apr-21	Kaletpani Village	170	86	48	11.68	21.75	Mining Activities	About 2500m
20-Apr-21	North West of Working Face (Tumulia)	214	86	49	15.04	29.27	Mining Activities	About 1000m

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100	60	80	80
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

Project :

Kulda OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
02-Apr-21	West of Working Face	149	72	43	12.37	25.16	Mining Activities	About 500m
02-Apr-21	South of Working Face	162	80	43	12.34	24.35	Mining Activities, Coal Transportation, CHP	About 500m
02-Apr-21	North of CHP	156	81	42	11.59	24.51	Domestic, OCP, Transportation	About 500m
03-Apr-21	West of Working Face	154	67	37	12.64	25.37	Mining Activities	About 500m
03-Apr-21	South of Working Face	185	86	49	12.49	24.68	Mining Activities, Coal Transportation, CHP	About 500m
03-Apr-21	North of CHP	184	90	47	12.31	25.46	Domestic, OCP, Transportation	About 500m
09-Apr-21	West of Working Face	189	85	48	13.48	27.53	Mining Activities	About 500m
09-Apr-21	North of CHP	196	92	50	12.68	25.73	Domestic, OCP, Transportation	About 500m
09-Apr-21	South of Working Face	193	75	47	13.86	25.47	Mining Activities, Coal Transportation, CHP	About 500m
10-Apr-21	North of CHP	176	87	49	11.84	24.85	Domestic, OCP, Transportation	About 500m
10-Apr-21	South of Working Face	206	90	50	14.52	26.49	Mining Activities, Coal Transportation, CHP	About 500m
10-Apr-21	West of Working Face	194	82	47	13.72	27.81	Mining Activities	About 500m
16-Apr-21	South of Working Face	153	70	46	11.09	21.14	Mining Activities, Coal Transportation, CHP	About 500m
16-Apr-21	West of Working Face	119	61	37	10.37	20.46	Mining Activities	About 500m
16-Apr-21	North of CHP	204	88	48	13.64	25.41	Domestic, OCP, Transportation	About 500m
17-Apr-21	South of Working Face	131	67	39	11.25	20.46	Mining Activities, Coal Transportation, CHP	About 500m
17-Apr-21	West of Working Face	142	75	47	10.50	20.81	Mining Activities	About 500m

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AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

17-Apr-21	North of CHP	222	93	42	13.81	25.62	Domestic, OCP, Transportation	About 500m
23-Apr-21	South of Working Face	181	87	50	12.94	23.57	Mining Activities, Coal Transportation, CHP	About 500m
23-Apr-21	North of CHP	173	81	50	12.82	24.73	Domestic, OCP, Transportation	About 500m
23-Apr-21	West of Working Face	155	92	51	11.07	21.38	Mining Activities	About 500m
24-Apr-21	West of Working Face	176	85	45	11.68	21.73	Mining Activities	About 500m
24-Apr-21	South of Working Face	171	84	49	12.54	23.16	Mining Activities, Coal Transportation, CHP	About 500m
24-Apr-21	North of CHP	161	75	44	12.60	24.38	Domestic, OCP, Transportation	About 500m
29-Apr-21	South of Working Face	185	77	41	12.82	23.42	Mining Activities, Coal Transportation, CHP	About 500m
29-Apr-21	West of Working Face	153	82	49	11.24	21.62	Mining Activities	About 500m
29-Apr-21	North of CHP	169	64	40	12.71	24.52	Domestic, OCP, Transportation	About 500m
30-Apr-21	West of Working Face	165	80	44	11.79	21.49	Mining Activities	About 500m
30-Apr-21	South of Working Face	109	53	39	10.17	20.53	Mining Activities, Coal Transportation, CHP	About 500m

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100	60	80	80
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AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

Project :

Kulda OCP

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
30-Apr-21	North of CHP	180	85	43	12.47	23.59	Domestic, OCP, Transportation	About 500m

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100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP			
Monitoring Station	North of CHP			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Apr-21	4.01	<0.1	<1.0	<1.0
03-Apr-21	3.99	<0.1	<1.0	<1.0
09-Apr-21	4.12	<0.1	<1.0	<1.0
10-Apr-21	4.05	<0.1	<1.0	<1.0
16-Apr-21	3.21	<0.1	<1.0	<1.0
17-Apr-21	3.25	<0.1	<1.0	<1.0
23-Apr-21	3.31	<0.1	<1.0	<1.0
24-Apr-21	3.29	<0.1	<1.0	<1.0
29-Apr-21	3.34	<0.1	<1.0	<1.0
30-Apr-21/	3.37	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP			
Monitoring Station	South of Working Face			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Apr-21	3.42	<0.1	<1.0	<1.0
03-Apr-21	3.36	<0.1	<1.0	<1.0
09-Apr-21	3.52	<0.1	<1.0	<1.0
10-Apr-21	3.48	<0.1	<1.0	<1.0
16-Apr-21	2.68	<0.1	<1.0	<1.0
17-Apr-21	2.65	<0.1	<1.0	<1.0
23-Apr-21	2.71	<0.1	<1.0	<1.0
24-Apr-21	2.63	<0.1	<1.0	<1.0
29-Apr-21	2.61	<0.1	<1.0	<1.0
30-Apr-21	2.73	<0.1	<1.0	<1.0
Standard		1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Kulda OCP			
Monitoring Station	West of Working Face			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
02-Apr-21	2.12	<0.1	<1.0	<1.0
03-Apr-21	2.16	<0.1	<1.0	<1.0
09-Apr-21	2.22	<0.1	<1.0	<1.0
10-Apr-21	2.24	<0.1	<1.0	<1.0
16-Apr-21	2.41	<0.1	<1.0	<1.0
17-Apr-21	2.38	<0.1	<1.0	<1.0
23-Apr-21	2.43	<0.1	<1.0	<1.0
24-Apr-21	2.48	<0.1	<1.0	<1.0
29-Apr-21	2.45	<0.1	<1.0	<1.0
30-Apr-21	2.68	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Garjanbahal OCP			
Monitoring Station	Kaletpani Village			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
05-Apr-21	3.86	<0.1	<1.0	<1.0
06-Apr-21	3.64	<0.1	<1.0	<1.0
12-Apr-21	3.80	<0.1	<1.0	<1.0
13-Apr-21	3.78	<0.1	<1.0	<1.0
19-Apr-21	2.43	<0.1	<1.0	<1.0
20-Apr-21	2.45	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Basundhara

Project	Garjanbahal OCP			
Monitoring Station	North West of Working Face (Tumulia)			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
05-Apr-21	3.12	<0.1	<1.0	<1.0
06-Apr-21	3.20	<0.1	<1.0	<1.0
12-Apr-21	3.18	<0.1	<1.0	<1.0
13-Apr-21	3.05	<0.1	<1.0	<1.0
19-Apr-21	2.86	<0.1	<1.0	<1.0
20-Apr-21	2.82	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Basundhara

PROJECT :

Garjanbahal OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
08-Apr-21	220 KV Substation	66.6	62.7
08-Apr-21	South-West of Coal Face	62.5	58.6
27-Apr-21	220 KV Substation	64.9	62.6
27-Apr-21	South-West of Coal Face	66.8	64.9

PROJECT :

Kulda OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
08-Apr-21	External CT Road	63.2	58.6
08-Apr-21	North of CHP	64.9	62.1
27-Apr-21	External CT Road	64.6	57.2
27-Apr-21	North of CHP	62.1	55.8

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MoEF Standard Notification dated 25th September, 2000

6.00 AM - 10.00 PM
Leq 75dB(A)

10.00 PM - 6.00 AM
Leq 70dB(A)



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TABLE--

EFFLUENT QUALITY DATA

Area :

Basundhara

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Garjanbahal OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Apr-21	Mine Sump Water	6.93	<4.0	42	28		
14-Apr-21	Outlet of Settling Tank (Kanika Siding)	7.67	<4.0	94	148		
27-Apr-21	Outlet of Settling Tank (Kanika Siding)	7.62	<4.0	86	132		
27-Apr-21	Mine Sump Water	6.98	<4.0	48	36		

Project :

Kulda OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-Apr-21	Final Outlet of ETP	7.79	<4.0	20	16		
14-Apr-21	Inlet of ETP	7.47	<4.0	28	20		
14-Apr-21	Mine Sump Water Near Kulda Nursery	7.59	<4.0	30	20		
27-Apr-21	Mine Sump Water Near Kulda Nursery	7.51	<4.0	36	24		
27-Apr-21	Inlet of ETP	7.36	<4.0	38	28		
27-Apr-21	Final Outlet of ETP	7.61	<4.0	28	20		

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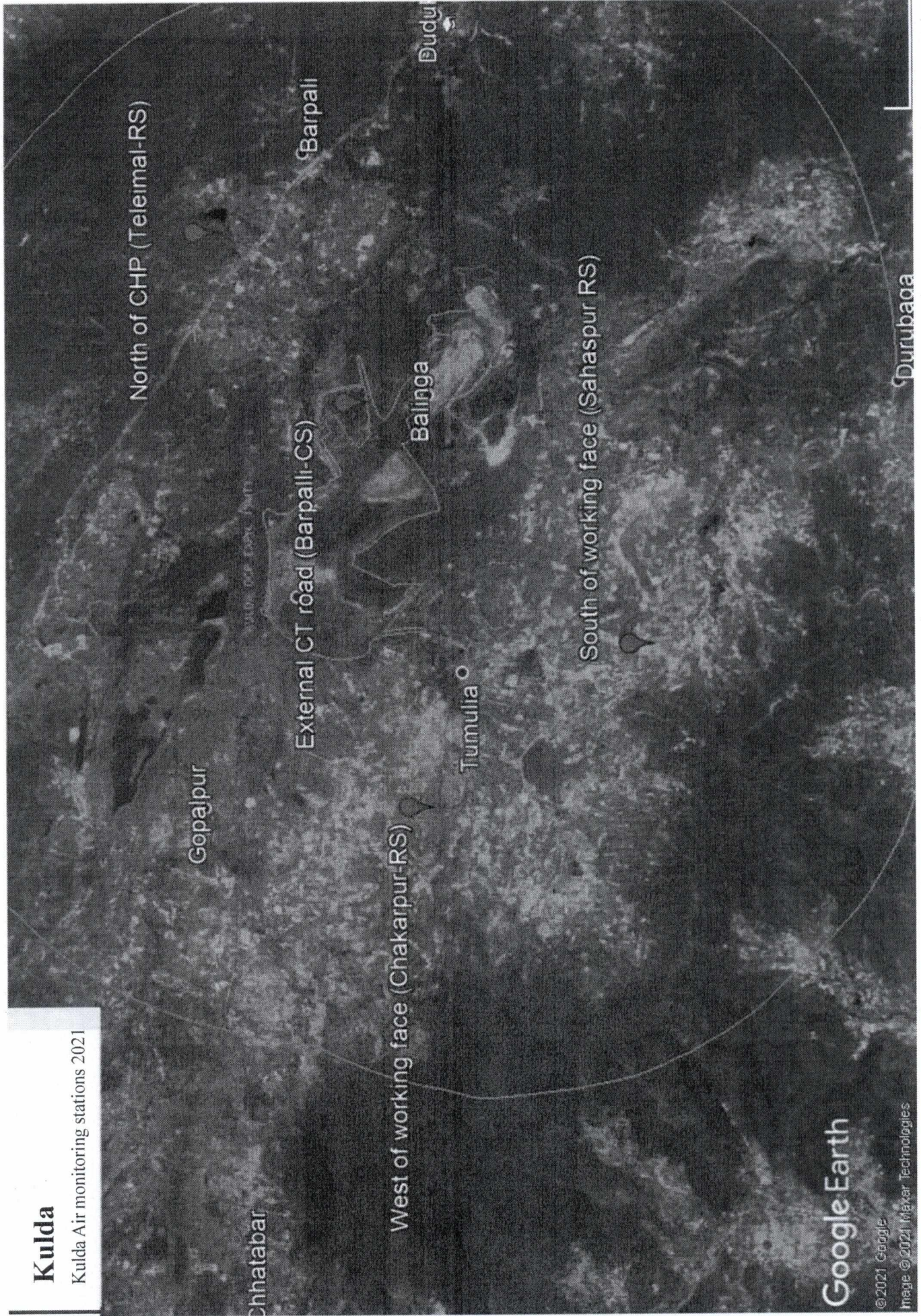
O.I.C.
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CMPDI, RI-VII
Bhubaneswar

[Handwritten Signature: Dattanaik]
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge	5.5-9.0	10	100	250	30
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Kulda

Kulda Air monitoring stations 2021



Google Earth

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Garjhanbahal

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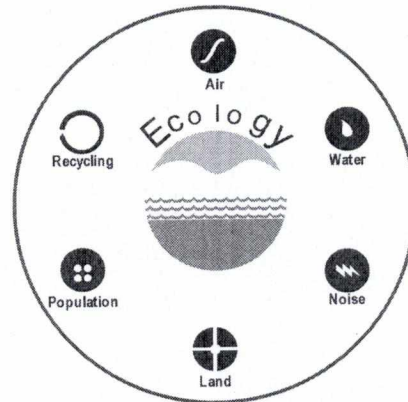
Job No.750001

**Environmental Monitoring Report
Of
Orient Area
For
April- 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



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Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi]

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No.1 & 2

(conc. in $\mu\text{g}/\text{cu.m.}$)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
09-Apr-21	Orient Mine No.2	317	197	62	14.35	27.83	Coal Stock Yard, Surface Bunker, Coal Transport	About 250m
26-Apr-21	Orient Mine No.2	282	153	59	16.72	32.74	Coal Stock Yard, Surface Bunker, Coal Transport	About 250m

[Signature]
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MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 3

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
10-Apr-21	Orient Mine No. 3	309	205	52	14.12	28.65	Coal Stockyard, Surface Bunker, Coal Transport	About 200m
26-Apr-21	Orient Mine No. 3	294	181	48	16.83	31.57	Coal Stockyard, Surface Bunker, Coal Transport	About 200m

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Bhubaneswar**

Tattasik

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MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 4

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
15-Apr-21	Orient Mine No. 4	326	179	45	15.73	29.47	Coal Transportation Road	About 300m
29-Apr-21	Orient Mine No. 4	277	159	57	14.35	28.16	Coal Transportation Road	About 300m

Q.L.C.

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Bhubaneswar**

J. Pattanayak
**Authorised Signatory
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BHUBANESWAR**

MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Hirakand Bundia Mine (HBM)

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
13-Apr-21	HBI Mine	364	209	64	16.81	31.52	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
13-Apr-21	Bundia Colony Pump House	239	126	49	11.35	23.57	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
14-Apr-21	Rampur Officers Guest House	209	129	48	11.14	22.68	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
26-Apr-21	HBI Mine	332	198	63	18.72	37.64	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
27-Apr-21	Bundia Colony Pump House	198	113	47	13.49	29.71	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
30-Apr-21	Rampur Officers Guest House	177	104	46	11.81	20.93	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

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MoEF Standards Notification dated 25th September, 2000	500	250		120	120
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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Reference Station)

Project :

Orient Mine No.1 & 2

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
05-Apr-21	VIP Guest House IB Valley	144	69	42	11.48	23.68	Coal Stock Yard, Surface Bunker, Coal	About 800m
06-Apr-21	VIP Guest House IB Valley	157	71	44	12.53	25.37	Coal Stock Yard, Surface Bunker, Coal	About 800m
12-Apr-21	VIP Guest House IB Valley	165	80	48	13.84	26.71	Coal Stock Yard, Surface Bunker, Coal	About 800m
13-Apr-21	VIP Guest House IB Valley	177	92	49	13.46	26.36	Coal Stock Yard, Surface Bunker, Coal	About 800m
19-Apr-21	VIP Guest House IB Valley	142	88	43	10.82	21.87	Coal Stock Yard, Surface Bunker, Coal	About 800m
20-Apr-21	VIP Guest House IB Valley	127	83	38	10.61	21.45	Coal Stock Yard, Surface Bunker, Coal	About 800m

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Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Reference Station)

Project :

Hirakand Bundia Mine (HBM)

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source(DGS)	Distance from DGS
07-Apr-21	Rampur Sub Area (Reported Only)	185	78	44	17.40	36.12	Coal Stock And CT Road	About 900m
08-Apr-21	Rampur Sub Area (Reported Only)	196	73	49	17.89	36.59	Coal Stock And CT Road	About 900m
14-Apr-21	Rampur Sub Area (Reported Only)	178	77	47	16.73	35.75	Coal Stock And CT Road	About 900m
15-Apr-21	Rampur Sub Area (Reported Only)	198	85	51	18.27	37.64	Coal Stock And CT Road	About 900m
21-Apr-21	Rampur Sub Area (Reported Only)	134	65	37	13.81	25.67	Coal Stock And CT Road	About 900m
22-Apr-21	Rampur Sub Area (Reported Only)	149	74	39	13.24	25.16	Coal Stock And CT Road	About 900m
27-Apr-21	Rampur Sub Area (Reported Only)	186	86	44	12.73	24.51	Coal Stock And CT Road	About 900m
28-Apr-21	Rampur Sub Area (Reported Only)	174	90	49	15.26	29.73	Coal Stock And CT Road	About 900m

DA/SW
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*NAAQS,2009		100	60	80	80
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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	Orient Mine No. 1 & 2			
Monitoring Station	VIP Guest House, IB Valley			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
05-Apr-21	2.64	<0.1	<1.0	<1.0
06-Apr-21	2.58	<0.1	<1.0	<1.0
12-Apr-21	2.76	<0.1	<1.0	<1.0
13-Apr-21	2.74	<0.1	<1.0	<1.0
19-Apr-21	2.83	<0.1	<1.0	<1.0
20-Apr-21	2.56	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Orient

Project	HBI Mine			
Monitoring Station	Rampur Sub Area (Reported)			
Date of sampling	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)
07-Apr-21	2.86	<0.1	<1.0	<1.0
08-Apr-21	2.78	<0.1	<1.0	<1.0
14-Apr-21	2.80	<0.1	<1.0	<1.0
15-Apr-21	2.81	<0.1	<1.0	<1.0
21-Apr-21	2.98	<0.1	<1.0	<1.0
22-Apr-21	2.89	<0.1	<1.0	<1.0
27-Apr-21	2.96	<0.1	<1.0	<1.0
28-Apr-21	2.91	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

Orient Mine No. 1 & 2

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Apr-21	VIP Guest House, IB Valley	63.7	59.7
03-Apr-21	Orient Mine No. 1 & 2	66.8	64.2
20-Apr-21	VIP Guest House, IB Valley	66.8	63.6
20-Apr-21	Orient Mine No. 1 & 2	64.7	62.2

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MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)



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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

Orient Mine No.3

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
06-Apr-21	Orient Mine No.3	62.1	56.3
20-Apr-21	Orient Mine No.3	64.9	62.1

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MoEF Standard Notification dated 25th September, 2000

6.00 AM -10.00 PM
Leq 75dB(A)

10.00 PM -6.00 AM
Leq 70dB(A)



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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

Orient Mine No.4

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Apr-21	Orient Mine No.4	66.6	63.2
20-Apr-21	Orient Mine No.4	66.8	62.1

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MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A)	10.00 PM -6.00 AM Leq 70dB(A)
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TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HBI Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
03-Apr-21	HBI Mine	64.3	62.1
03-Apr-21	Bundia Colony Pump House	66.7	63.2
03-Apr-21	Rampur Officer's Guest House	64.9	62.1
20-Apr-21	HBI Mine	67.6	63.8
20-Apr-21	Bundia Colony Pump House	64.7	61.3
20-Apr-21	Rampur Officer's Guest House	63.6	57.6

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MoEF Standard Notification dated 25th September, 2000	6.00 AM -10.00 PM Leq 75dB(A)	10.00 PM -6.00 AM Leq 70dB(A)
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TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Orient Mine No. 1 & 2

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Mine Sump of Mine No. 2	7.46	<4.0	32	20		
27-Apr-21	Mine Sump of Mine No. 2	7.40	<4.0	38	24		

MS/SM

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TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Orient Mine No. 3

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Mine Sump of Mine No. 3	6.86	<4.0	22	16		
27-Apr-21	Mine Sump of Mine No. 3	6.89	<4.0	30	20		

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

Orient Mine No. 4

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Mine Sump of Mine No. 4	7.05	<4.0	20	12		
27-Apr-21	Mine Sump of Mine No. 4	7.09	<4.0	30	20		

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TABLE--

EFFLUENT QUALITY DATA

Area :

Orient

(All dimensions are in mg/l unless otherwise stated except pH)

Project :

HBI Mine

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
10-Apr-21	Mine Sump of HBM	6.96	<4.0	26	16		
27-Apr-21	Mine Sump of HBM	6.90	<4.0	34	24		

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MoEF Standard Notification dated 25th September, 2000 and MoEF Schedule VI, General standard for discharge of Environmental Pollutants Part A: Effluents	5.5-9.0	10	100	250	30
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Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 1 & 2		Indian Drinking Standards (IS-10500):2012	
	Tap Water at Budhijaam Colony	Mine no 1 & 2 Filter Plant		
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.35	7.21	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	84	108	200	600
Total Hardness (Ca CO ₃)(mg/L)	100	100	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	24	34	250	1000
Total Dissolve Solid(mg/L)	194	218	500	2000
Calcium(mg/L)	24.05	19.24	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	24.31	6.11	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Drinking Water Quality Data Orient Area

Project / OCP	Orient Mine No. 3	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Mine no 3 Filter Plant	Acceptable	Permissible
Date of Sampling	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	2	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	6.91	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	60	200	600
Total Hardness (Ca CO ₃)(mg/L)	108	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	24	250	1000
Total Dissolve Solid(mg/L)	184	500	2000
Calcium(mg/L)	17.64	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	36.39	200	400
Nitrate(mg/L)	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	1	1.5
Arsenic(mg/L)	<0.005	0.01	0.05
Lead(mg/L)	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	5	15
Total Chromium (mg/L)	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	0.003	No relaxation

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Drinking Water Quality Data Orient Area

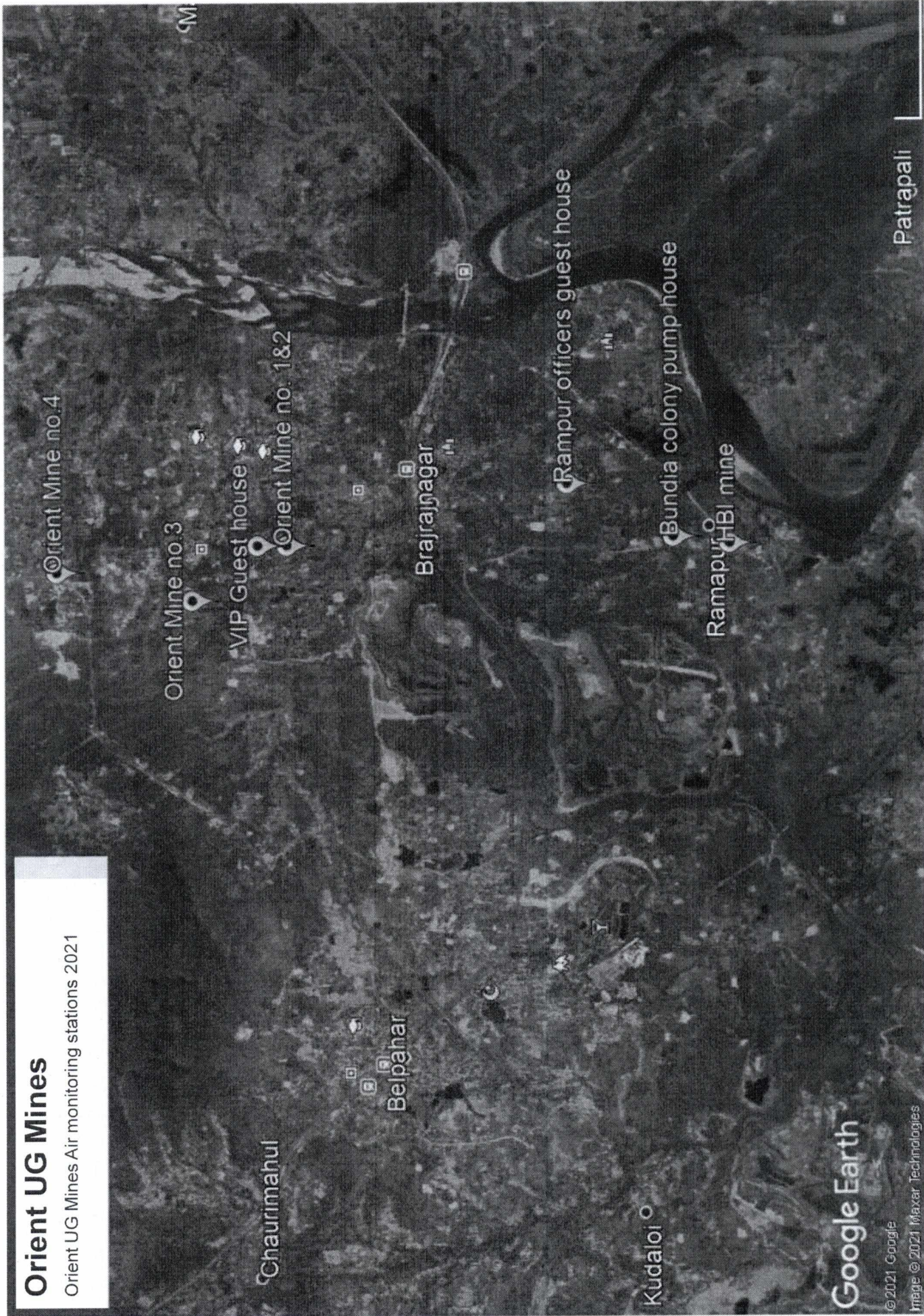
Project / OCP	HBI Mine		Indian Drinking Standards (IS-10500):2012	
	Tap Water at Rampur Colony	HBI Water Filter Plant		
Monitoring Station	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.62	7.40	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	116	108	200	600
Total Hardness (Ca CO ₃)(mg/L)	92	76	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	26	26	250	1000
Total Dissolve Solid(mg/L)	206	204	500	2000
Calcium(mg/L)	25.65	25.65	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	4.62	5.75	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

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Orient UG Mines

Orient UG Mines Air monitoring stations 2021



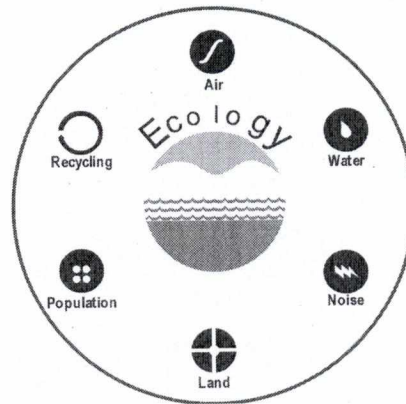
Job No.750001

**Environmental Monitoring Report
Of
MCL HQ
For
April- 2021**

IB Valley Coalfield



Mahanadi Coalfields Limited



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Central Mine Planning & Design Institute Ltd.
(A Subsidiary of Coal India Ltd.)

Regional Institute-VII, Samantpuri, P.O : RRL, Bhubaneswar-751013 (Odisha)
[Assistance from Environment Division, CMPDI(HQs), Ranchi

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cmpdi
A Mini Ratna Company

Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL(HQ)		Indian Drinking Standards (IS-10500):2012	
	Tap water at DAV School (Anand vihar)	Tap Water at Corporate Office (Jagrati Vihar)		
Date of Sampling	9/Apr/2021	9/Apr/2021	Acceptable	Permissible
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	1	5
pH	7.73	7.78	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	84	92	200	600
Total Hardness (Ca CO ₃)(mg/L)	92	100	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	14	14	250	1000
Total Dissolve Solid(mg/L)	154	164	500	2000
Calcium(mg/L)	24.05	28.86	75	200
Copper(mg/L)	<0.03	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	<0.04	0.1	0.3
Sulphate(mg/L)	9.49	9.72	200	400
Nitrate(mg/L)	<0.5	<0.5	45	No relaxation
Fluoride(mg/L)	<0.30	<0.30	1	1.5
Arsenic(mg/L)	<0.005	<0.005	0.01	0.05
Lead(mg/L)	<0.005	<0.005	0.01	No relaxation
Zinc(mg/L)	<0.04	<0.04	5	15
Total Chromium (mg/L)	<0.01	<0.01	0.05	No relaxation
Boron(mg/L)	<0.1	<0.1	0.5	1.0
Cadmium(mg/L)	<0.001	<0.001	0.003	No relaxation

DA/SW
O.T.C.
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