

Job No.750001

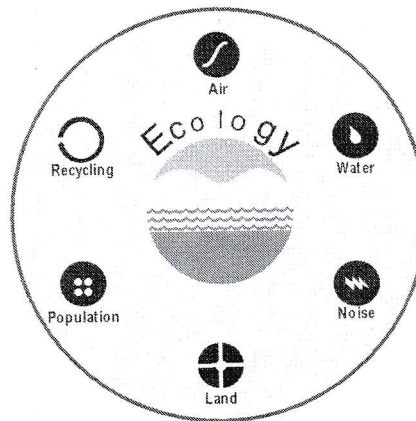
**Environmental Monitoring Report
Of
Ib Valley Area
For
May 2021**

Ib Valley Coalfield



MCL

Mahanadi Coalfields Limited



cmpdi

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]

The test report shall not be reproduced in part or full without written approval of the competent authority



cmpdi

A Min. Rates Company

Test Report

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
07-May-21	North of the Mine	239	128	47	18.09	40.13	Mining Activity	About 500m
07-May-21	Near South Coal Stock	269	138	48	14.85	33.60	Mining Activities, Coal Transportation	About 500m
07-May-21	Near Project Office	251	119	40	20.69	35.00	Domestic, OCP, Transportation	About 500m
21-May-21	North of the Mine	169	80	37	23.07	24.85	Mining Activity	About 500m
21-May-21	Near South Coal Stock	249	126	39	15.38	39.73	Mining Activities, Coal Transportation	About 500m
21-May-21	Near Project Office	181	104	35	20.82	38.48	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
05-May-21	West of the Mine	309	176	49	19.97	38.33	Distance From 'y' Curve Railway Siding	About 450m
05-May-21	South of the Mine	328	196	46	22.66	32.95	Mine Haul Roads	About 400m
06-May-21	South-East of the Mine	292	171	48	15.96	27.96	Coal Transportation Road	About 500m
06-May-21	East of the Mine	287	162	43	21.05	42.52	Coal Transportation Road	About 500m
19-May-21	West of the Mine	243	117	36	22.24	35.19	Distance From 'y' Curve Railway Siding	About 450m
19-May-21	South of the Mine	254	132	38	18.50	44.24	Mine Haul Roads	About 400m
20-May-21	South-East of the Mine	255	127	39	25.65	29.46	Coal Transportation Road	About 500m
20-May-21	East of the Mine	214	119	35	21.03	39.65	Coal Transportation Road	About 500m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

Authorised Signatory
CMPDI, R/VII, LAB
BHUBANESWAR

Handwritten Signature
O.I.C.
Env. Lab
CMPDI, R/VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

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
03-May-21	Khokelmal (Reported Only)	141	79	42	23.82	36.59	Railway siding	About 1000m FromSiding
03-May-21	Rampur Sub Area	167	78	45	22.52	34.88	Coal Stock And CT Road	About 900m
04-May-21	Rampur Sub Area	146	71	42	16.13	32.10	Coal Stock And CT Road	About 900m
04-May-21	Khokelmal (Reported Only)	147	75	44	22.89	47.29	Railway siding	About 1000m FromSiding
10-May-21	Khokelmal (Reported Only)	126	67	40	18.61	31.38	Railway siding	About 1000m FromSiding
10-May-21	Rampur Sub Area	121	64	39	23.44	25.35	Coal Stock And CT Road	About 900m
11-May-21	Rampur Sub Area	100	52	35	25.47	33.78	Coal Stock And CT Road	About 900m
11-May-21	Khokelmal (Reported Only)	112	61	37	19.20	47.07	Railway siding	About 1000m FromSiding
17-May-21	Khokelmal (Reported Only)	113	71	32	18.46	42.84	Railway siding	About 1000m FromSiding
17-May-21	Rampur Sub Area	114	67	37	24.25	28.30	Coal Stock And CT Road	About 900m
18-May-21	Rampur Sub Area	108	68	33	24.97	28.01	Coal Stock And CT Road	About 900m
18-May-21	Khokelmal (Reported Only)	125	69	30	18.09	36.07	Railway siding	About 1000m FromSiding
24-May-21	Rampur Sub Area	92	57	29	18.21	23.91	Coal Stock And CT Road	About 900m
24-May-21	Khokelmal (Reported Only)	98	56	27	21.06	36.87	Railway siding	About 1000m FromSiding
25-May-21	Khokelmal (Reported Only)	90	51	24	16.22	46.55	Railway siding	About 1000m FromSiding
25-May-21	Rampur Sub Area	98	55	30	16.34	35.11	Coal Stock And CT Road	About 900m

Signature

*NAAQS,2009

100 60 80 80

Authorized Signatory
CMPDI, RIVII, LAB
BHUBANESWAR

O. I. C.
Env. Lab
CMPDI, RIVII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

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
03-May-21	Khokelmal	141	79	42	23.82	36.59	Railway siding	About 1000m FromSiding
04-May-21	Khokelmal	147	75	44	22.89	47.29	Railway siding	About 1000m FromSiding
10-May-21	Khokelmal	126	67	40	18.61	31.38	Railway siding	About 1000m FromSiding
11-May-21	Khokelmal	112	61	37	19.20	47.07	Railway siding	About 1000m FromSiding
17-May-21	Khokelmal	113	71	32	18.46	42.84	Railway siding	About 1000m FromSiding
18-May-21	Khokelmal	125	69	30	18.09	36.07	Railway siding	About 1000m FromSiding
24-May-21	Khokelmal	98	56	27	21.06	36.87	Railway siding	About 1000m FromSiding
25-May-21	Khokelmal	90	51	24	16.22	46.55	Railway siding	About 1000m FromSiding


[Handwritten Signature]

*NAAQS,2009

	100	60	80	80
--	-----	----	----	----

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR


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

 cmpdi <i>A Mini Ratna Company</i>	AMBIENT AIR QUALITY DATA (NAAQS PARAMETER) Area: IB Valley			

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)
3/May/21	2.27	<0.1	<1.0	<1.0
4/May/21	2.36	<0.1	<1.0	<1.0
10/May/21	2.41	<0.1	<1.0	<1.0
11/May/21	2.5	<0.1	<1.0	<1.0
17/May/21	4.09	<0.1	<1.0	<1.0
18/May/21	3.99	<0.1	<1.0	<1.0
24/May/21	3.86	<0.1	<1.0	<1.0
25/May/21	3.92	<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)
3/May/21	4.11	<0.1	<1.0	<1.0
4/May/21	4.24	<0.1	<1.0	<1.0
10/May/21	3.98	<0.1	<1.0	<1.0
11/May/21	4.18	<0.1	<1.0	<1.0
17/May/21	2.86	<0.1	<1.0	<1.0
18/May/21	2.74	<0.1	<1.0	<1.0
24/May/21	2.66	<0.1	<1.0	<1.0
25/May/21	2.78	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR


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



cmpdi

A Mini Ratna Company

AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: IB Valley

Project	Lajkura OCP			
Monitoring Station	Khokelmal			
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)
3/May/21	4.11	<0.1	<1.0	<1.0
4/May/21	4.24	<0.1	<1.0	<1.0
10/May/21	3.98	<0.1	<1.0	<1.0
11/May/21	4.18	<0.1	<1.0	<1.0
17/May/21	2.86	<0.1	<1.0	<1.0
18/May/21	2.74	<0.1	<1.0	<1.0
24/May/21	2.66	<0.1	<1.0	<1.0
25/May/21	2.78	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mini Katar Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

PROJECT :

Lajkura OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-May-21	Near Project Office	68.3	64.2
13-May-21	Near South Coal Stock	63.7	62.1
13-May-21	North of Mine	66.4	63.2
13-May-21	Khokelmal	64.7	62.6
27-May-21	Khokelmal	63.6	59.2
27-May-21	North of Mine	64.5	62.3
27-May-21	Near South Coal Stock	66.9	61.7
27-May-21	Near Project Office	67.8	63.2

PROJECT :

Samleswari OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
12-May-21	West of the Mine	63.2	60.7
13-May-21	West of the Mine	67.8	64.3
13-May-21	South of the Mine	64.4	62.1
13-May-21	Rampur Sub Area	66.9	63.2
13-May-21	Khokelmal (Reported Only)	64.7	62.6
13-May-21	East of the Mine	66.5	64.3
13-May-21	South-East of the Mine	63.7	60.4
27-May-21	East of the Mine	64.6	57.9
27-May-21	South of the Mine	65.8	67.6
27-May-21	Rampur Sub Area	64.7	60.5

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mini Ratna Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Ib Valley

27-May-21	Khokelmal (Reported Only)	63.6	59.2
27-May-21	South-East of the Mine	66.8	63.4

MS

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)*



cmpdi

A Mini Ratna Company

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
13-May-21	Tap Discharge Water of Central Hospital	7.64	<4.0	34	20		

Project :

Lajkura OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
11-May-21	STP Inlet	6.44		52		<2.0	
11-May-21	STP Outlet	6.59		46		<2.0	
11-May-21	Mine Sump Water	6.63					
13-May-21	Inlet of MDTP	6.69	<4.0	46	36		
13-May-21	Inlet of Oil & Grease Trap	6.29	<4.0	54	48		
13-May-21	Outlet of Oil & Grease Trap	6.47	<4.0	40	36		
13-May-21	Outlet of MDTP	6.87	<4.0	40	32		
25-May-21	Outlet of MDTP	6.49	<4.0	26	16		
25-May-21	STP Outlet	6.62		38		<2.0	

Project :

Samaleswari OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
11-May-21	STP Inlet	6.38		62		<2.0	
11-May-21	STP Outlet	6.44		50		<2.0	
13-May-21	Outlet of Sedimentation Pond	6.33	<4.0	50	36		
13-May-21	Outlet of Orampada Sump	7.05	<4.0	24	16		
24-May-21	Outlet of Sedimentation Pond	6.49	<4.0	38	24		
25-May-21	STP Outlet	6.58		44		<2.0	
25-May-21	Mine Sump Water	6.89					

Signature

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
---------	----	-----	-----	----

**CMPDI, RI-VII, LAB
BHUBANESWAR**

**O. I. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar**



cmpdi

A Mini Ratna Company

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	Samaleswari OCP					Remarks
		pH	Oil & Grease	TSS	COD	BOD	
13-May-21	Discharge Point of Mine Sump Water	6.82	<4.0	38	48		
25-May-21	Discharge Point of Mine Sump Water	6.31	<4.0	32	36		

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

[Handwritten Signature]

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

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
--	---------	----	-----	-----	----



cmpdi

A Mini Ratna Company

Drinking Water Quality Data IB Valley Area

Project / OCP	Samaleswari OCP		Indian Drinking Standards (IS-10500):2012	
	Well Water From Kudopali	Tap Water From Samaleswari OCP Colony		
Monitoring Station				
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	2	1	5
pH	7.43	7.12	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	112	108	200	600
Total Hardness (Ca CO ₃)(mg/L)	100	96	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	28	32	250	1000
Total Dissolve Solid(mg/L)	220	218	500	2000
Calcium(mg/L)	32.06	32.06	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)	16.52	10.26	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

Authorised Signatory
CMPDI, RT-VII, LAB
BHUBANESWAR

24/01/2021
Env. Lab
CMPDI, RT-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

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	Acceptable	Permissible
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	2	1	5
pH	7.10	7.15	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	112	112	200	600
Total Hardness (Ca CO ₃)(mg/L)	100	96	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	30	28	250	1000
Total Dissolve Solid(mg/L)	224	214	500	2000
Calcium(mg/L)	20.84	20.84	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)	12.47	14.68	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

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

24/5/2021
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Miniratna Company

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	Acceptable	Permissible
Monitoring Station				
Date of Sampling	8/May/2021	8/May/2021		
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	3	1	5
pH	6.96	7.15	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	60	80	200	600
Total Hardness (Ca CO ₃)(mg/L)	116	104	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	52	24	250	1000
Total Dissolve Solid(mg/L)	210	182	500	2000
Calcium(mg/L)	16.03	20.84	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)	13.21	20.35	200	400
Nitrate(mg/L)	5.62	3.45	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

24/5/21

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mini Ratna Company

Drinking Water Quality Data IB Valley Area

Project / OCP	Lajkura OCP		Indian Drinking Standards (IS-10500):2012	
	Chhualibera Village Well Water	VIP Guest House Tap Water		
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	2	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	2	1	5
pH	7.06	7.35	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	52	80	200 ⁴	600
Total Hardness (Ca CO ₃)(mg/L)	76	108	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	30	28	250	1000
Total Dissolve Solid(mg/L)	154	208	500	2000
Calcium(mg/L)	25.62	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)	29.46	31.58	200	400
Nitrate(mg/L)	13.52	<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

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Ib valley

Project:

Lajkura OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 02; Village Gumadera; Village high school	24.32

Project:

Samaleswari OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 04; Village Kutabaga; (Believer's church school)	11.49

Authorised Signatory
CMPDI, XI-VII, LAB
BHUBANESWAR

[Signature]
O.L.C.
Env. Lab
CMPDI, XI-VII
Bhubaneswar



cmpdi

A Mini-Kata Company

TABLE--

Well Water Level Monitoring Data

Area :

Ib Valley

Project

Lajkura OCP

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Madhuban Nagar Well Water	18.2
18-May-21	Chauliberna Village Well Water	11.5
18-May-21	Adarsh Nagar Colony Well Water	8.7

Project

Samleswari OCP

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Well of Kudopali	11.7
18-May-21	Well of Lajkura	16.5

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
Lab
CMPDI, RI-VII
Bhubaneswar

Samaleswari

Samaleswari Air monitoring stations 2021

Snastrinag Legend



Lajkura

Lajkura Air monitoring stations 2021



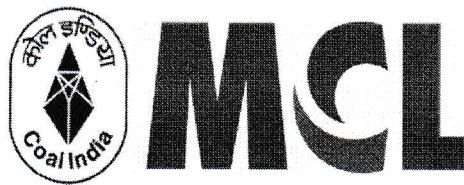
Google Earth

Image © 2021 Maxar Technologies
2021 Google

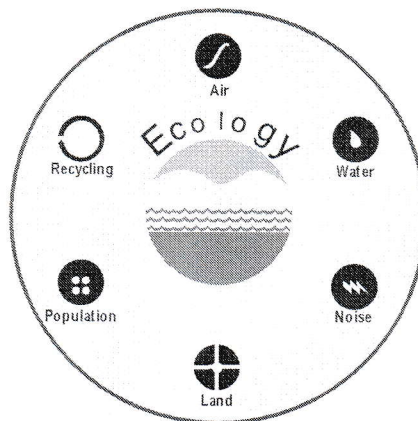
Job No.750001

**Environmental Monitoring Report
Of
Lakhanpur Area
For
May 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

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]

The test report shall not be reproduced in part or full without written approval of the competent authority



cmpdi

A Tata Steel Company

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
08-May-21	Near Lilari Magazine House	268	153	49	21.71	36.61	Coal Transportation	About 500m
22-May-21	Near Lilari Magazine House	207	135	36	13.72	37.38	Coal Transportation	About 500m

[Handwritten Signature]

MoEF Standards Notification dated 25th September, 2000

600

300

120

120

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O. L. C.
Env. Lab
CMPDI RI-VII
Bhubaneswar



cmpdi

A Min. Kibasi 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	SO2	NOx	Dust Generating Source	Distance from DGS
12-May-21	Near Magazine House	192	109	43	15.76	36.58	Mining Activities	About 500m
12-May-21	Near Central Workshop	256	139	46	16.16	23.99	Mining Activities	About 500m
26-May-21	Near Magazine House	127	81	33	19.64	20.50	Mining Activities	About 500m
26-May-21	Near Central Workshop	165	93	35	21.22	22.67	Mining Activities	About 500m

Project :

Lakhanpur 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
08-May-21	Near Quarry 3	268	144	48	24.34	41.82	Coal Stockyard, Surface Bunker, Coal Transport	About 500m
08-May-21	Near Lilari Nallah Pump House	163	96	35	16.76	47.35	Mining Activities	About 500m
22-May-21	Near Quarry 3	209	111	36	25.14	32.22	Coal Stockyard, Surface Bunker, Coal Transport	About 500m
22-May-21	Near Lilari Nallah Pump House	129	80	25	20.62	21.24	Mining Activities	About 500m

MoEF Standards Notification dated 25th September, 2000

500	250		120	120
-----	-----	--	-----	-----

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O. L. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

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
03-May-21	South West of Quarry 6	162	79	45	16.32	32.48	Mining Related Activities	About 500m
03-May-21	South of Quarry 6	155	78	44	17.61	30.83		
04-May-21	South of Quarry 6	143	73	41	19.95	33.42		
04-May-21	South West of Quarry 6	140	72	41	21.31	35.61	Mining Related Activities	About 500m
10-May-21	South West of Quarry 6	123	59	31	18.90	49.63	Mining Related Activities	About 500m
10-May-21	South of Quarry 6	106	60	30	19.53	25.65		
11-May-21	South of Quarry 6	98	56	33	17.65	29.47		
11-May-21	South West of Quarry 6	112	65	34	23.57	57.40	Mining Related Activities	About 500m
17-May-21	South West of Quarry 6	114	66	31	17.87	27.03	Mining Related Activities	About 500m
17-May-21	South of Quarry 6	106	61	34	20.44	27.33		
18-May-21	South of Quarry 6	97	57	31	16.68	23.51		
18-May-21	South West of Quarry 6	95	61	28	18.36	39.39	Mining Related Activities	About 500m
24-May-21	South of Quarry 6	94	51	25	18.12	30.96		
24-May-21	South West of Quarry 6	120	63	32	20.06	23.65	Mining Related Activities	About 500m
25-May-21	South West of Quarry 6	92	49	25	22.18	32.92	Mining Related Activities	About 500m
25-May-21	South of Quarry 6	112	59	28	20.84	37.90		

*NAAQS, 2009

		100	60	80	80
--	--	-----	----	----	----

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Rashtra Company

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
03-May-21	South of the Mine	168	83	46	24.34	33.93	Mining Activities, Coal Transportation	About 500m
03-May-21	East of the Mine	171	84	41	17.61	30.13	Mining Activities	About 500m
04-May-21	East of the Mine	157	75	38	25.24	37.09	Mining Activities	About 500m
04-May-21	South of the Mine	141	76	44	16.53	28.27	Mining Activities, Coal Transportation	About 500m
10-May-21	South of the Mine	144	70	35	12.43	36.51	Mining Activities, Coal Transportation	About 500m
10-May-21	East of the Mine	142	68	31	26.59	37.88	Mining Activities	About 500m
11-May-21	East of the Mine	147	66	34	23.55	46.61	Mining Activities	About 500m
11-May-21	South of the Mine	117	64	31	18.03	50.50	Mining Activities, Coal Transportation	About 500m
17-May-21	South of the Mine	109	62	34	18.68	35.69	Mining Activities, Coal Transportation	About 500m
17-May-21	East of the Mine	117	71	32	18.70	24.40	Mining Activities	About 500m
18-May-21	East of the Mine	105	68	30	17.61	19.62	Mining Activities	About 500m
18-May-21	South of the Mine	91	59	28	15.95	47.39	Mining Activities, Coal Transportation	About 500m
24-May-21	East of the Mine	109	59	27	25.38	37.60	Mining Activities	About 500m
24-May-21	South of the Mine	107	68	30	16.62	41.79	Mining Activities, Coal Transportation	About 500m
25-May-21	South of the Mine	88	55	26	20.58	53.10	Mining Activities, Coal Transportation	About 500m
25-May-21	East of the Mine	103	69	31	14.91	29.84	Mining Activities	About 500m

Signature

*NAAQS, 2009

100	60	80	80
-----	----	----	----

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP			
Monitoring Station	South of Quarry 6			
Date of sampling	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	(µg/m³)	(µg/m³)	(ng/m³)	(ng/m³)
3/May/21	3.72	<0.1	<1.0	<1.0
4/May/21	3.68	<0.1	<1.0	<1.0
10/May/21	3.64	<0.1	<1.0	<1.0
11/May/21	3.59	<0.1	<1.0	<1.0
17/May/21	3.11	<0.1	<1.0	<1.0
18/May/21	3.36	<0.1	<1.0	<1.0
24/May/21	3.24	<0.1	<1.0	<1.0
25/May/21	3.4	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Project	Lakhanpur OCP			
Monitoring Station	South West of Quarry 6			
Date of sampling	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)
	(µg/m³)	(µg/m³)	(ng/m³)	(ng/m³)
3/May/21	3.86	<0.1	<1.0	<1.0
4/May/21	3.77	<0.1	<1.0	<1.0
10/May/21	3.68	<0.1	<1.0	<1.0
11/May/21	3.89	<0.1	<1.0	<1.0
17/May/21	3.76	<0.1	<1.0	<1.0
18/May/21	3.86	<0.1	<1.0	<1.0
24/May/21	3.91	<0.1	<1.0	<1.0
25/May/21	3.84	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

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)
3/May/21	2.86	<0.1	<1.0	<1.0
4/May/21	2.74	<0.1	<1.0	<1.0
10/May/21	2.68	<0.1	<1.0	<1.0
11/May/21	2.89	<0.1	<1.0	<1.0
17/May/21	2.48	<0.1	<1.0	<1.0
18/May/21	3.52	<0.1	<1.0	<1.0
24/May/21	3.61	<0.1	<1.0	<1.0
25/May/21	3.39	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Project	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)
3/May/21	3.78	<0.1	<1.0	<1.0
4/May/21	3.48	<0.1	<1.0	<1.0
10/May/21	3.61	<0.1	<1.0	<1.0
11/May/21	3.76	<0.1	<1.0	<1.0
17/May/21	2.36	<0.1	<1.0	<1.0
18/May/21	2.41	<0.1	<1.0	<1.0
24/May/21	2.44	<0.1	<1.0	<1.0
25/May/21	2.5	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Min. Katar Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

Belpahar OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-May-21	Near Central Workshop	64.5	62.9
14-May-21	Near Magazine House	66.9	63.2
14-May-21	South of the Mine	64.7	62.1
14-May-21	East of the Mine	63.6	61.6
28-May-21	Near Central Workshop	67.3	58.6
28-May-21	Near Magazine House	65.9	62.7
28-May-21	South of the Mine	64.7	63.6
28-May-21	East of the Mine	66.9	60.3

PROJECT :

Lakhanpur OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-May-21	Near Lilari Nallah Pump House	66.8	62.1
14-May-21	Near Quarry 3	64.7	59.8
14-May-21	South of Quarry 6	62.3	57.5
14-May-21	South West of Quarry 6	64.7	62.3
28-May-21	Near Lilari Nallah Pump House	63.9	57.3
28-May-21	Near Quarry 3	64.8	59.2
28-May-21	South of Quarry 6	65.6	62.7
28-May-21	South West of Quarry 6	66.3	63.5

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)

Authorised Signatory
CMPDI/RI-VII, LAB
BHUBANESWAR

O. L. C.
Env. Lab
CMPDI RI-VII
Bhubaneswar



cmpdi

A Coal India Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Lakhanpur

PROJECT :

Lilari OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
14-May-21	Near Lilari Magazine House	67.6	64.3
28-May-21	Near Lilari Magazine House	65.7	62.6

DA/SW

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)



cmpdi

A Mini Ratna Company

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
11-May-21	Inlet of Sewage Treatment Plant	7.17		36		<2.0	
11-May-21	Clear Water Tank of Sewage Treatment Plant	6.89		36		<2.0	
14-May-21	Clear Water Tank of MDTP	6.61	<4.0	56	40		
25-May-21	Clear Water Tank of Sewage Treatment Plant	8.02		28		<2.0	
25-May-21	Clear Water Tank of MDTP	6.79	<4.0	48	32		

Project :

Lakhanpur OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
14-May-21	Outlet of Secondary Sedimentation Tank	6.52	<4.0	42	32		
14-May-21	Mine Sump Water	7.31	<4.0	40	25		
25-May-21	Mine Sump Water	7.18	<4.0	26	16		
25-May-21	Outlet of Secondary Sedimentation Tank	6.64	<4.0	34	24		

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Signature

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
--	---------	----	-----	-----	----

O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Miniratna Company

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	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.48	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	72	200	600
Total Hardness (Ca CO ₃)(mg/L)	80	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	20	250	1000
Total Dissolve Solid(mg/L)	154	500	2000
Calcium(mg/L)	20.84	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	12.74	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

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

24/5/21
O.L.C.
Env. Lab
CMPDI RI-VII
Bhubaneswar




cmpdi

A Mini Ratna Company

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	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	7.41	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	68	200	600
Total Hardness (Ca CO ₃)(mg/L)	84	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	22	250	1000
Total Dissolve Solid(mg/L)	148	500	2000
Calcium(mg/L)	20.84	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	21.46	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

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR


Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Coal India Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Lakhanpur

Project:

Belpahar OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
25-May-21	Piezometer No MIP 08; Village Kusraloi, Inside the premises of PrathamikVidyalaya	7.49
25-May-21	Piezometer No MIP 07; Infront of DAV school Bandbahal, Inside colonysubstation.	6.82

Project:

Lakhanpur OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
25-May-21	Piezometer No MIP 09; Village Junion; Inside the premisses of State GovtHorticulture Institute.	11.56
25-May-21	Piezometer No MIP 10; Village Dahaldera; Inside the premisses of UP school.	16.73

Project:

Lilari OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 06; Infront of Lilari mines Project office.	20.73

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Water Kaitani Company

TABLE--

Well Water Level Monitoring Data

Area :

Lakhanpur

Project

Belpahar OCP

Date of sampling	Name of the Station	Depth to Water Level (in m. bgl)
18-May-21	Darlipali Village Well	10.7
18-May-21	Ubuda Village Well	12.4

Project

Lakhanpur OCP

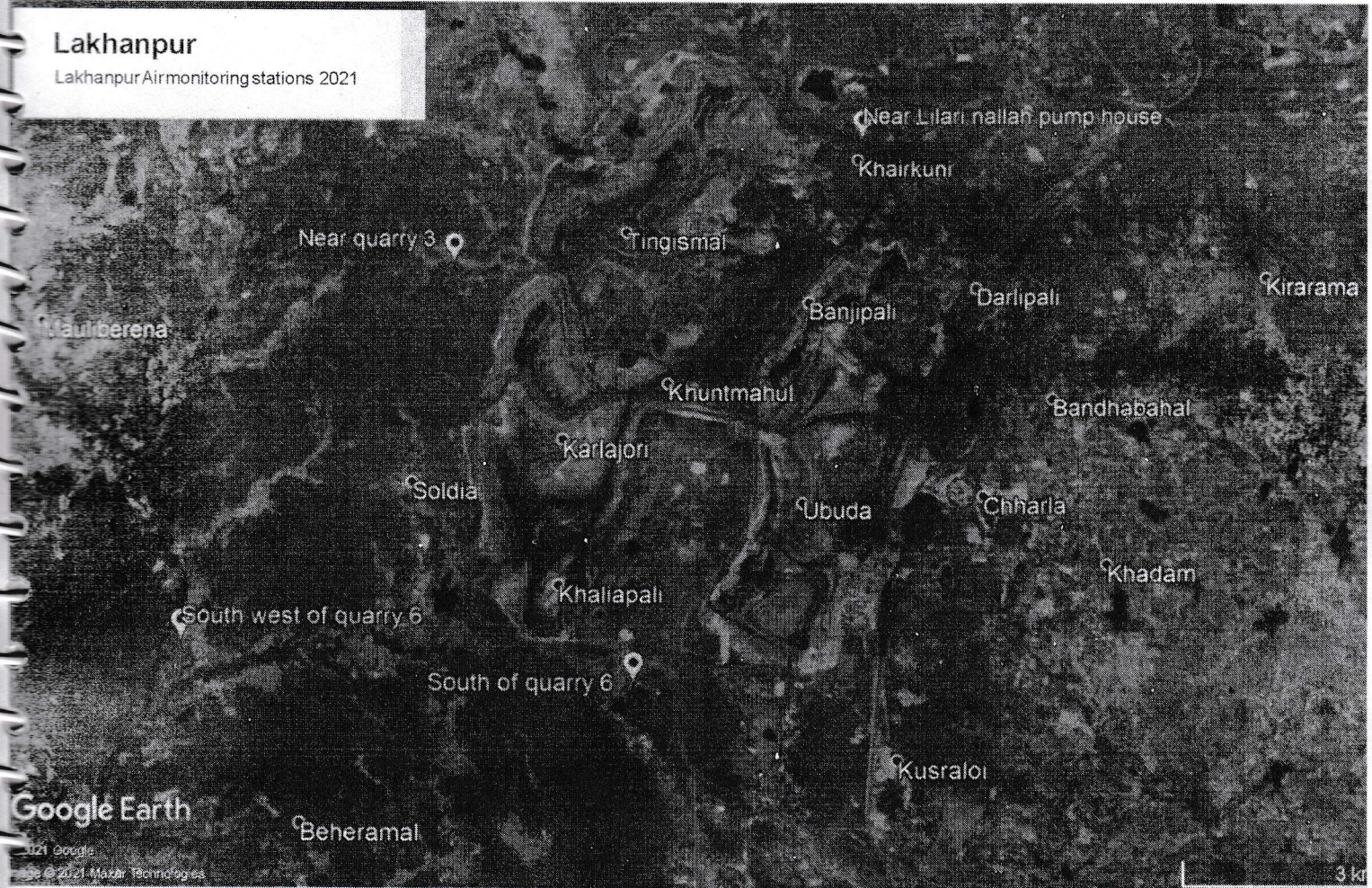
Date of sampling	Name of the Station	Depth to Water Level (in m. bgl)
18-May-21	Kansar Village Well	13.8
18-May-21	Khairkuni Village Well	15.6

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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

Lakhanpur

Lakhanpur Air monitoring stations 2021



Google Earth

© 2021 Google
© 2021 Maxar Technologies

3 km

Belpahar

Belpahar Air monitoring stations 2021



Google Earth

© 2021 Google
© 2021 Mapbox Technologies

Job No.750001

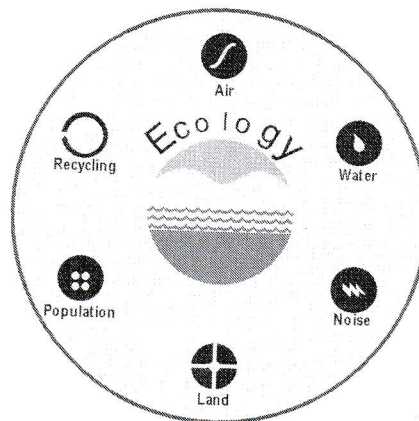
**Environmental Monitoring Report
Of
Mahalaxmi Area
For
May 2021**

Ib Valley Coalfield



MCL

Mahanadi Coalfields Limited



cmpdi

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]

The test report shall not be reproduced in part or full without written approval of the competent authority

O. L. C.
Env. Lab
CMPDI RI-VI
Bhubaneswar



cmpdi

A Mitsui Bussan 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
14-May-21	West of Coal Stock	243	112	40	15.02	30.89	Mining Activities, OCP, Transportation	About 500m
14-May-21	South West of Working Face Gopalpur Village, Near CMPDI Camp	138	80	39	22.70	44.52	Mining Activity	About 500m
14-May-21	North of the Sardega Railway Siding	205	103	37	19.22	31.41	Mining Activities, OCP, Coal Transportation	About 500m
28-May-21	West of Coal Stock	174	94	29	21.99	37.08	Mining Activities, OCP, Transportation	About 500m
28-May-21	South West of Working Face Gopalpur Village, Near CMPDI Camp	120	71	37	22.30	41.73	Mining Activity	About 500m
28-May-21	North of the Sardega Railway Siding	159	83	30	19.76	36.85	Mining Activities, OCP, Coal Transportation	About 500m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

LAB
BRUSANESWAR

O.T.C.
Env. Lab
CMPDI, RI-VII
BRUSANESWAR



cmpdi

A Miniratna Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Mahalaxmi

(Reference Station)

Project :

Basundhara (w) 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-May-21	Sarangijharia Community Centre	151	76	41	15.93	39.92		
06-May-21	Sarangijharia Community Centre	143	70	38	20.41	35.75		
12-May-21	Sarangijharia Community Centre	123	68	31	18.85	36.36		
13-May-21	Sarangijharia Community Centre	116	63	29	19.91	31.69		
19-May-21	Sarangijharia Community Centre	119	68	34	20.92	50.08		
20-May-21	Sarangijharia Community Centre	126	71	37	24.44	48.40		
26-May-21	Sarangijharia Community Centre	84	53	27	23.93	36.46		
27-May-21	Sarangijharia Community Centre	92	55	23	18.68	37.38		

*NAAQS,2009

100 60 80 80

Signature
CMPDI, RI-VII, LAB
BHUBANESWAR

S. B. S. W.
o.t.c.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Mahalaxmi

Project	Basundhara (W) OCP			
Monitoring Station	Sarangijharia Community Centre			
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)
5/May/21	4.01	<0.1	<1.0	<1.0
6/May/21	4.14	<0.1	<1.0	<1.0
12/May/21	4.22	<0.1	<1.0	<1.0
13/May/21	4.08	<0.1	<1.0	<1.0
19/May/21	3.76	<0.1	<1.0	<1.0
20/May/21	3.68	<0.1	<1.0	<1.0
26/May/21	3.81	<0.1	<1.0	<1.0
27/May/21	3.64	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorized Signatory
CMPDI, RI-VII, Bhubaneswar
BHUBANESWAR

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



cmpdi

A Miniratna Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Mahalaxmi

PROJECT :

Basundhara (W) OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-May-21	North of the Sardega Railway Siding	65.6	63.7
15-May-21	West of Coal Stock	63.7	58.6
15-May-21	South-West of Working Face	64.9	60.9
15-May-21	Sarangijharia Community Centre	62.4	56.7
28-May-21	South-West of Working Face	66.3	59.4
29-May-21	North of the Sardega Railway Siding	63.6	56.7
29-May-21	West of Coal Stock	64.8	57.8
29-May-21	Sarangijharia Community Centre	64.5	58.2

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

Satish
Env. Lab
CMPDI, RI-VII
BHUBANESWAR



cmpdi

A Mittal Rashtra Company

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
15-May-21	M1-Basundhara (E) OCP's Sump	7.39	<4.0	32	20		
26-May-21	M1-Basundhara (E) OCP's Sump	7.26	<4.0	18	12		

CMPDI, AI-VII, LAB
BHUBANESWAR

[Signature]
O.T.G.
Env. Lab
CMPDI, AI-VII
Bhubaneswar

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
--	---------	----	-----	-----	----



cmpdi

A Mini Ratna Company

Drinking Water Quality Data Mahalaxmi Area

Project / OCP	Basundhara OCP	Indian Drinking Standards (IS-10500):2012	
Monitoring Station	Water Treatment Plant Clear Water Reservoir	Acceptable	Permissible
Date of Sampling	8/May/2021		
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	1	5
pH	7.23	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	32	200	600
Total Hardness (Ca CO3)(mg/L)	164	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	24	250	1000
Total Dissolve Solid(mg/L)	324	500	2000
Calcium(mg/L)	41.68	75	200
Copper(mg/L)	<0.03	0.05	1.5
Manganese(mg/L)	<0.04	0.1	0.3
Sulphate(mg/L)	147.52	200	400
Nitrate(mg/L)	4.63	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

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O. L. C.
 Env. Lab
 CMPDI, RI-VII
 Bhubaneswar



cmpdi

A Mini-Russia Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Mahalaxmi

Project:

Basundhara (W) OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
20-May-21	Piezometer No MIP 15; Back side of Sardega Primary school.	6.47
20-May-21	Piezometer No MIP 16; Village Kulhparha (new basti) on the road from Sardega to Gopalpur.	18.61
20-May-21	Piezometer No MIP 17; Village Gopalpur; CMPDI Exploration camp.	13.43
29-May-21	Piezometer No MIP 13; Village Tumlia; Inside the campus of Manikeswar College.	Pipe was fitted . Level could not <i>not be measured</i>

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

24/01/21
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Coal India Company

TABLE--

Well Water Level Monitoring Data

Area :

Mahalaxmi

Project

Basundhara OCP

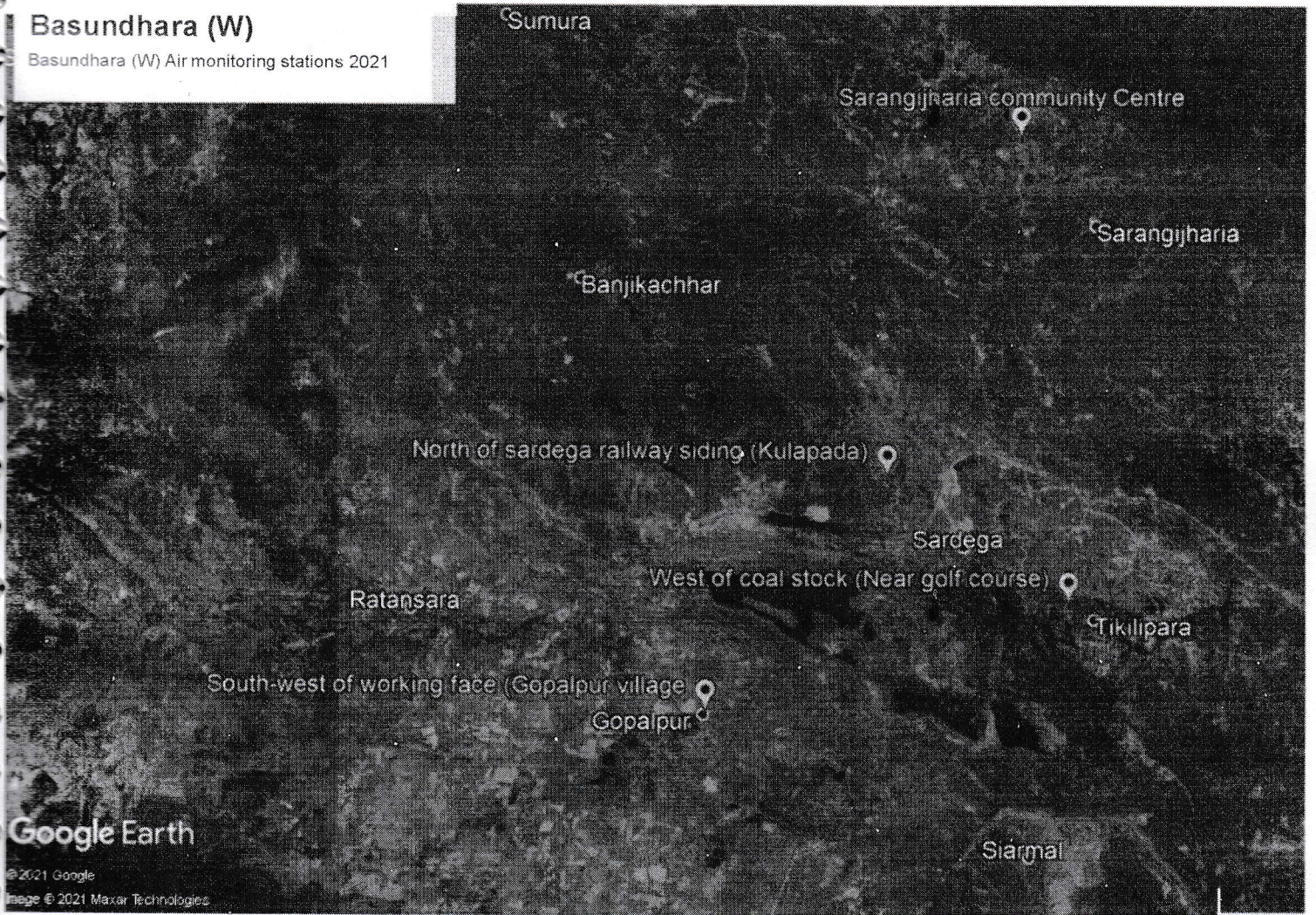
<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
20-May-21	Tiklipada Village Well	10.5
20-May-21	Sardega Village Well	14.2

Authorised Signatory
CMPDI, RI-VII, LAB
BRUBANESWAR

DAI SWI

Basundhara (W)

Basundhara (W) Air monitoring stations 2021



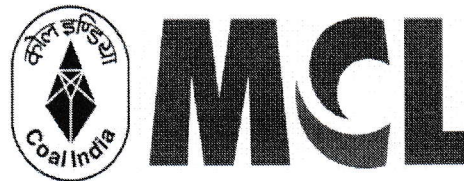
Google Earth

© 2021 Google
Image © 2021 Maxar Technologies

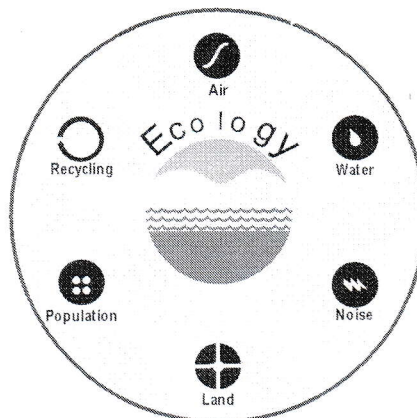
Job No.750001

**Environmental Monitoring Report
Of
Basundhara Area
For
May 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]

The test report shall not be reproduced in part or full without written approval of the competent authority

Signature
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Min. Katar Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Compliance Station)

Project :

Garjanbahal OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
15-May-21	South West of Coal Face	239	134	43	20.77	21.55	Mining Activity	About 500m
15-May-21	Near Coal Sampling Lab	196	103	38	18.37	27.01	Railway Siding, Transportation	About 500m
15-May-21	220 KV Substation	215	119	40	23.63	29.74	C.T Road, Mining	About 350m
29-May-21	South West of Coal Face	199	107	36	22.29	34.52	Mining Activity	About 500m
29-May-21	Near Coal Sampling Lab	159	85	30	15.29	23.12	Railway Siding, Transportation	About 500m
29-May-21	220 KV Substation	169	95	30	17.58	23.09	C.T Road, Mining	About 350m

Project :

Kulda OCP

(conc. in µg/cu.m.)

Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO2	NOx	Dust Generating Source	Distance from DGS
13-May-21	External CT Road	282	151	49	19.68	35.33	Mining Activities, Coal Transportation	About 500m
27-May-21	External CT Road	215	119	40	27.71	46.84	Mining Activities, Coal Transportation	About 500m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mini Ratna Company

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
05-May-21	South of Working Face	149	80	42	13.87	23.52	Mining Activities, Coal Transportation, CHP	About 500m
05-May-21	North of CHP	139	76	48	13.98	38.87	Domestic, OCP, Transportation	About 500m
05-May-21	West of Working Face	172	82	43	18.47	30.90	Mining Activities	About 500m
06-May-21	West of Working Face	149	75	41	17.57	34.70	Mining Activities	About 500m
06-May-21	South of Working Face	141	73	37	17.03	31.23	Mining Activities, Coal Transportation, CHP	About 500m
06-May-21	North of CHP	121	71	44	19.94	33.33	Domestic, OCP, Transportation	About 500m
12-May-21	North of CHP	87	55	32	21.15	32.82	Domestic, OCP, Transportation	About 500m
12-May-21	West of Working Face	123	69	33	21.76	45.24	Mining Activities	About 500m
12-May-21	South of Working Face	124	69	32	21.28	29.22	Mining Activities, Coal Transportation, CHP	About 500m
13-May-21	West of Working Face	125	67	36	21.37	23.95	Mining Activities	About 500m
13-May-21	South of Working Face	108	67	34	14.95	48.96	Mining Activities, Coal Transportation, CHP	About 500m
13-May-21	North of CHP	113	66	34	23.93	37.64	Domestic, OCP, Transportation	About 500m
19-May-21	South of Working Face	112	63	36	21.00	40.52	Mining Activities, Coal Transportation, CHP	About 500m
19-May-21	North of CHP	117	71	38	25.23	48.42	Domestic, OCP, Transportation	About 500m
19-May-21	West of Working Face	112	73	40	18.51	29.58	Mining Activities	About 500m
20-May-21	West of Working Face	105	66	34	18.08	30.89	Mining Activities	About 500m
20-May-21	South of Working Face	120	65	31	17.02	38.61	Mining Activities, Coal Transportation, CHP	About 500m

*NAAQS, 2009

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

100 60 80 80

Signature
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Basundhara

(Reference Station)

Date	Area	Station ID	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	Source	Distance
20-May-21	North of CHP	106	63	40	24.07	30.85	Domestic, OCP, Transportation	About 500m
26-May-21	West of Working Face	99	61	30	15.47	29.22	Mining Activities	About 500m
26-May-21	South of Working Face	106	60	28	26.29	46.82	Mining Activities, Coal Transportation, CHP	About 500m
26-May-21	North of CHP	113	61	31	19.16	38.77	Domestic, OCP, Transportation	About 500m
27-May-21	North of CHP	103	65	26	23.13	44.25	Domestic, OCP, Transportation	About 500m
27-May-21	West of Working Face	92	55	26	16.28	27.11	Mining Activities	About 500m
27-May-21	South of Working Face	93	54	25	17.65	24.73	Mining Activities, Coal Transportation, CHP	About 500m

*NAAQS.2009

100	60	80	80
-----	----	----	----

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

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



cmpdi

A Mini Ratna Company

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
07-May-21	Kaletpani Village	111	67	40	13.88	32.89	Mining Activities	About 2500m
07-May-21	North West of Working Face (Tumulia)	156	80	44	26.29	31.81	Mining Activities	About 1000m
08-May-21	North West of Working Face (Tumulia)	149	77	41	17.99	30.00	Mining Activities	About 1000m
08-May-21	Kaletpani Village	118	76	38	13.67	30.98	Mining Activities	About 2500m
14-May-21	Kaletpani Village	109	69	32	17.32	42.30	Mining Activities	About 2500m
14-May-21	North West of Working Face (Tumulia)	124	71	37	22.27	34.22	Mining Activities	About 1000m
15-May-21	North West of Working Face (Tumulia)	134	66	33	20.93	30.18	Mining Activities	About 1000m
15-May-21	Kaletpani Village	119	72	35	22.44	38.46	Mining Activities	About 2500m
21-May-21	Kaletpani Village	109	72	38	24.58	25.40	Mining Activities	About 2500m
21-May-21	North West of Working Face (Tumulia)	119	72	36	18.84	36.73	Mining Activities	About 1000m
22-May-21	North West of Working Face (Tumulia)	109	69	33	24.82	34.60	Mining Activities	About 1000m
22-May-21	Kaletpani Village	99	68	33	18.84	31.56	Mining Activities	About 2500m
28-May-21	North West of Working Face (Tumulia)	96	54	23	21.69	46.23	Mining Activities	About 1000m
28-May-21	Kaletpani Village	90	51	23	23.45	46.73	Mining Activities	About 2500m
29-May-21	Kaletpani Village	101	61	27	18.08	28.32	Mining Activities	About 2500m
29-May-21	North West of Working Face (Tumulia)	105	63	28	24.87	39.65	Mining Activities	About 1000m

O.L.C.

Env. Lab

CMPDI, RI-VII
Bhubaneswar

*NAAQS, 2009

100	60	80	80
-----	----	----	----

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



cmpdi

A Mini Ratna Company

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)
5/May/21	2.91	<0.1	<1.0	<1.0
6/May/21	2.88	<0.1	<1.0	<1.0
12/May/21	3.01	<0.1	<1.0	<1.0
13/May/21	3.11	<0.1	<1.0	<1.0
19/May/21	4.11	<0.1	<1.0	<1.0
20/May/21	4.08	<0.1	<1.0	<1.0
26/May/21	4.21	<0.1	<1.0	<1.0
27/May/21	3.98	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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)
5/May/21	3.86	<0.1	<1.0	<1.0
6/May/21	3.77	<0.1	<1.0	<1.0
12/May/21	3.67	<0.1	<1.0	<1.0
13/May/21	3.58	<0.1	<1.0	<1.0
19/May/21	3.48	<0.1	<1.0	<1.0
20/May/21	3.52	<0.1	<1.0	<1.0
26/May/21	3.66	<0.1	<1.0	<1.0
27/May/21	3.51	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O.L.C.
EPR Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

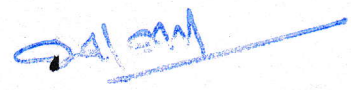
A Mini Ratna Company


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)
5/May/21	2.86	<0.1	<1.0	<1.0
6/May/21	2.64	<0.1	<1.0	<1.0
12/May/21	2.77	<0.1	<1.0	<1.0
13/May/21	2.92	<0.1	<1.0	<1.0
19/May/21	2.86	<0.1	<1.0	<1.0
20/May/21	2.74	<0.1	<1.0	<1.0
26/May/21	2.68	<0.1	<1.0	<1.0
27/May/21	2.59	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR


O.L.C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar

 cmpdi <i>A Mini Ratna Company</i>	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)
7/May/21	3.56	<0.1	<1.0	<1.0
8/May/21	3.48	<0.1	<1.0	<1.0
14/May/21	3.6	<0.1	<1.0	<1.0
15/May/21	3.51	<0.1	<1.0	<1.0
21/May/21	3.71	<0.1	<1.0	<1.0
22/May/21	3.68	<0.1	<1.0	<1.0
28/May/21	3.84	<0.1	<1.0	<1.0
29/May/21	3.7	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)

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)
7/May/21	2.77	<0.1	<1.0	<1.0
8/May/21	2.61	<0.1	<1.0	<1.0
14/May/21	2.48	<0.1	<1.0	<1.0
15/May/21	2.39	<0.1	<1.0	<1.0
21/May/21	2.52	<0.1	<1.0	<1.0
22/May/21	2.48	<0.1	<1.0	<1.0
28/May/21	2.61	<0.1	<1.0	<1.0
29/May/21	2.39	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR

O. L. C.
 Env. Lab
 CMPDI, RI-VII
 Bhubaneswar



cmpdi

A Min. Kadar Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Basundhara

PROJECT :

Garjanbahal OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-May-21	South-West of Coal Face	64.2	62.1
15-May-21	220 KV Substation	66.8	63.6
29-May-21	South-West of Coal Face	64.8	60.6
29-May-21	220 KV Substation	66.3	62.4

PROJECT :

Kulda OCP

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
15-May-21	North of CHP	62.6	56.4
15-May-21	External CT Road	64.8	6.1
29-May-21	North of CHP	64.2	56.5
29-May-21	External CT Road	66.6	63.5

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O. L. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Miniratna Company

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
15-May-21	Mine Sump Water	7.19	<4.0	40	28		
15-May-21	Outlet of Settling Tank (Kanika Siding)	6.86	<4.0	42	28		
26-May-21	Outlet of Settling Tank (Kanika Siding)	7.02	<4.0	34	20		
26-May-21	Mine Sump Water	7.10	<4.0	26	16		

Project :

Kulda OCP

Date of Sampling	Sampling Station	pH	Oil & Grease	TSS	COD	BOD	Remarks
15-May-21	Mine Sump Water Near Kulda Nursery	7.29	<4.0	30	20		
15-May-21	Final Outlet of ETP	7.18	<4.0	46	32		
15-May-21	Inlet of ETP	7.04	<4.0	52	36		
26-May-21	Final Outlet of ETP	7.29	<4.0	40	24		
26-May-21	Inlet of ETP	7.17	<4.0	44	28		
26-May-21	Mine Sump Water Near Kulda Nursery	7.51	<4.0	16	12		

Authorized 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

DA/SW
O. L. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini-Kelco Company

TABLE--

Well Water Level Monitoring Data

Area :

Basundhara

Project

Garjanbahal OCP


Date of sampling	Name of the Station	Depth to Water Level (in m. bgl)
20-May-21	South West of Coalface	14.7
20-May-21	Well at Garjanbahal Village	10.8

Project

Kulda OCP

Date of sampling	Name of the Station	Depth to Water Level (in m. bgl)
20-May-21	Well at Teleimal	13.6
20-May-21	Well at Sahaspur	9.4

Authorised Signatory
CMPDI, RI-VII, LAB
Bhubaneswar


O. L. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Basundhara

Project:

Kulda OCP

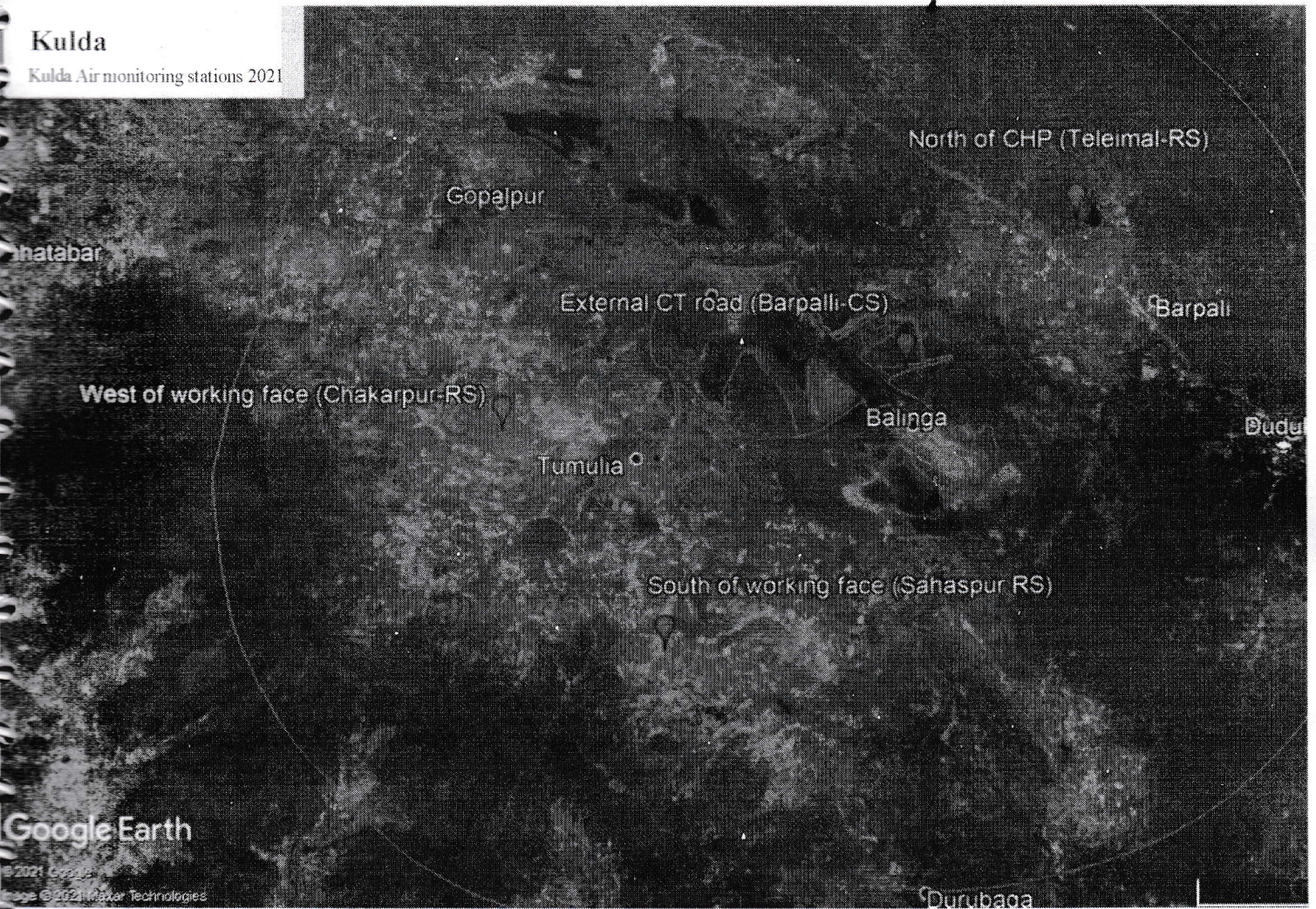
Date of Sampling	Name of the Station	Ground Levels (in meter)
20-May-21	Piezometer No MIP 14; Village Kulda; Primary school campus.	82.87
20-May-21	Piezometer No MIP 01; Village Garjanbahal (village school campus)	12.47
20-May-21	Piezometer No MIP 11; Village Karlikachar; Infront of Primary school.	11.51
20-May-21	Piezometer No MIP 12; Village Balinga; MCL office.	5.39

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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

Kulda

Kulda Air monitoring stations 2021



Garjhanbahal

Garjhanbahal Air monitoring stations 2021

Gopalpur

Kaletpani village

Siarmal

Barpali

Tumulia

North-west of working face (Tumulia)

1.500m

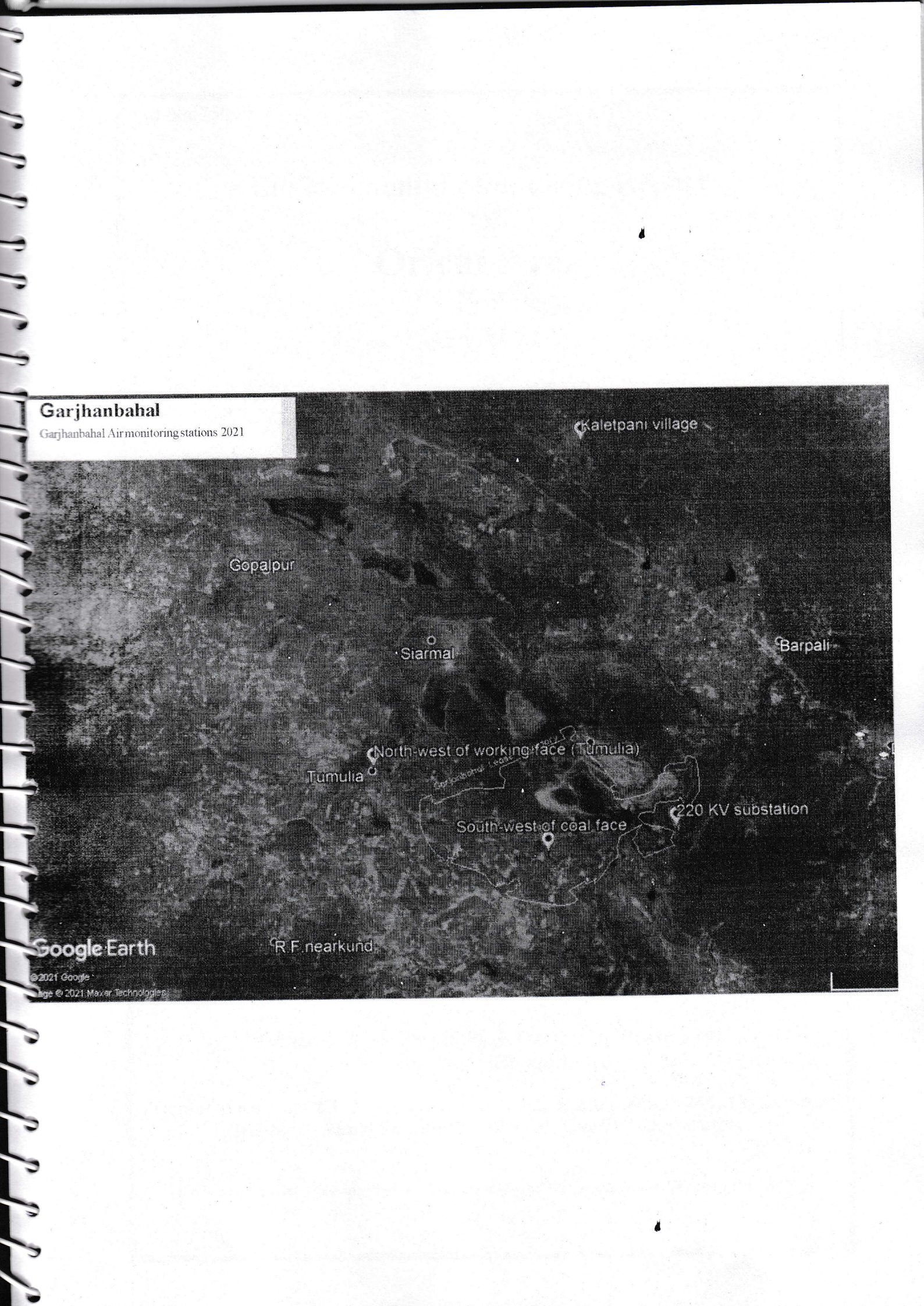
South-west of coal face

220 KV substation

Google Earth

R.F. nearkund

©2021 Google
Image © 2021 Maxar Technologies



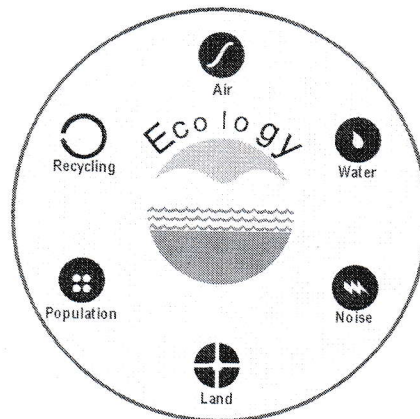
Job No.750001

**Environmental Monitoring Report
Of
Orient Area
For
May 2021**

Ib Valley Coalfield



Mahanadi Coalfields Limited



cmpdi

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]

The test report shall not be reproduced in part or full without written approval of the competent authority

9



cmpdi

A Tata Steel Company

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
13-May-21	Orient Mine No.2	238	129	42	20.31	34.95	Coal Stock Yard, Surface Bunker, Coal Transport	About 250m
27-May-21	Orient Mine No.2	201	109	37	16.56	23.66	Coal Stock Yard, Surface Bunker, Coal Transport	About 250m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR



cmpdi

A Mine Safety Company

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
04-May-21	Orient Mine No. 3	268	145	46	17.87	30.67	Coal Stockyard, Surface Bunker, Coal Transport	About 200m
18-May-21	Orient Mine No. 3	242	128	39	22.64	39.65	Coal Stockyard, Surface Bunker, Coal Transport	About 200m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

Authorized Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Min. Kibao Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Orient Mine No. 4

(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
03-May-21	Orient Mine No. 4	292	163	49	22.58	33.79	Coal Transportation Road	About 300m
17-May-21	Orient Mine No. 4	233	121	40	18.25	35.03	Coal Transportation Road	About 300m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

**CMPDI, RI-VII, LAB
BHUBANESWAR**

DA/SM



cmpdi

A Miniratna Company

Test Report

AMBIENT AIR QUALITY DATA

Area :

Orient

(Compliance Station)

Project :

Hirakand Bundia Mine (HBM)

(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-May-21	HBI Mine	317	187	49	23.76	39.67	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
06-May-21	Bundia Colony Pump House	216	139	41	24.55	30.70	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
07-May-21	Rampur Officers Guest House	118	69	35	18.83	34.24	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m
19-May-21	HBI Mine	253	140	43	20.52	32.08	Coal Stockyard, Surface Bunker, Coal Transport	About 100m
20-May-21	Bundia Colony Pump House	151	94	32	22.70	38.47	Coal Stockyard, Surface Bunker, Coal Transport	About 150m
21-May-21	Rampur Officers Guest House	103	61	30	20.79	28.98	Coal Stockyard, Surface Bunker, Coal Transport	About 1000m

MoEF Standards Notification dated 25th September, 2000

500

250

120

120

**CMPDI, RI-VII, LAB
BHUBANESWAR**

Satish C. M.
**Env. Lab
CMPDI, RI-VII
BHUBANESWAR**



cmpdi

A Mittal Rashtra Company

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
07-May-21	VIP Guest House IB Valley	116	74	38	23.17	31.78	Coal Stock Yard, Surface Bunker, Coal	About 800m
08-May-21	VIP Guest House IB Valley	105	69	35	22.40	29.57	Coal Stock Yard, Surface Bunker, Coal	About 800m
14-May-21	VIP Guest House IB Valley	110	71	31	19.10	34.73	Coal Stock Yard, Surface Bunker, Coal	About 800m
15-May-21	VIP Guest House IB Valley	118	76	33	16.07	26.29	Coal Stock Yard, Surface Bunker, Coal	About 800m
21-May-21	VIP Guest House IB Valley	107	69	30	17.28	30.84	Coal Stock Yard, Surface Bunker, Coal	About 800m
22-May-21	VIP Guest House IB Valley	102	60	26	24.42	38.85	Coal Stock Yard, Surface Bunker, Coal	About 800m
28-May-21	VIP Guest House IB Valley	90	52	21	21.63	35.95	Coal Stock Yard, Surface Bunker, Coal	About 800m
29-May-21	VIP Guest House IB Valley	97	57	25	17.92	34.41	Coal Stock Yard, Surface Bunker, Coal	About 800m

Authorized Signatory
CMPDI, RI-VII, LAB
BRUSANESWAR

	100	60	80	80
--	-----	----	----	----

Signature
CMPDI, RI-VII
BRUSANESWAR



cmpdi

A Mini Ratna Company

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
03-May-21	Rampur Sub Area (Reported Only)	167	78	45	22.52	34.88	Coal Stock And CT Road	About 900m
04-May-21	Rampur Sub Area (Reported Only)	146	71	42	16.13	32.10	Coal Stock And CT Road	About 900m
10-May-21	Rampur Sub Area (Reported Only)	121	64	39	23.44	25.35	Coal Stock And CT Road	About 900m
11-May-21	Rampur Sub Area (Reported Only)	100	52	35	25.47	33.78	Coal Stock And CT Road	About 900m
17-May-21	Rampur Sub Area (Reported Only)	114	67	37	24.25	28.30	Coal Stock And CT Road	About 900m
18-May-21	Rampur Sub Area (Reported Only)	108	68	33	24.97	28.01	Coal Stock And CT Road	About 900m
24-May-21	Rampur Sub Area (Reported Only)	92	57	29	18.21	23.91	Coal Stock And CT Road	About 900m
25-May-21	Rampur Sub Area (Reported Only)	98	55	30	16.34	35.11	Coal Stock And CT Road	About 900m

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

*NAAQS,2009


	100	60	80	80
--	-----	----	----	----


(Signature)
RI-VII, LAB
CMPDI, RI-VII
BHUBANESWAR

 cmpdi <i>A Mini Ratna Company</i>	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)
	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)
7/May/21	4.01	<0.1	<1.0	<1.0
8/May/21	4.12	<0.1	<1.0	<1.0
14/May/21	4.22	<0.1	<1.0	<1.0
15/May/21	4.08	<0.1	<1.0	<1.0
21/May/21	4.12	<0.1	<1.0	<1.0
22/May/21	3.98	<0.1	<1.0	<1.0
28/May/21	4.16	<0.1	<1.0	<1.0
29/May/21	4.15	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)


Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR


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

 <p>cmpdi A Mini Ratna Company</p>	<p>AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)</p> <p>Area: Orient</p>
--	---

Project	HBI Mine			
Monitoring Station	Rampur Sub Area (Reported)			
Date of sampling	Ozone (O ₃) ($\mu\text{g}/\text{m}^3$)	Lead (Pb) ($\mu\text{g}/\text{m}^3$)	Arsenic (As) (ng/m^3)	Nickel (Ni) (ng/m^3)
3/May/21	2.27	<0.1	<1.0	<1.0
4/May/21	2.36	<0.1	<1.0	<1.0
10/May/21	2.41	<0.1	<1.0	<1.0
11/May/21	2.5	<0.1	<1.0	<1.0
17/May/21	4.09	<0.1	<1.0	<1.0
18/May/21	3.99	<0.1	<1.0	<1.0
24/May/21	3.86	<0.1	<1.0	<1.0
25/May/21	3.92	<0.1	<1.0	<1.0
Standard	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)




J.T.C.
 Env. Lab
 CMPDI, RI-VII
 Bhubaneswar



cmpdi

A Min. Katar Company

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
13-May-21	Orient Mine No. 1 & 2	64.6	61.4
13-May-21	VIP Guest House, IB Valley	66.8	63.2
27-May-21	Orient Mine No. 1 & 2	66.3	62.1
27-May-21	VIP Guest House, IB Valley	64.8	60.5

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mine Safety Company

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
13-May-21	Orient Mine No.3	64.5	62.3
29-May-21	Orient Mine No.3	64.2	57.6

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Miniratna Company

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
13-May-21	Orient Mine No.4	66.7	64.3
27-May-21	Orient Mine No.4	67.7	61.5

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

[Signature]
ENV. LAB
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Coal India Company

TABLE--

NOISE LEVEL MONITORING DATA

AREA :

Orient

PROJECT :

HBI Mine

DATE OF SAMPLING	STATION	Noise Level Measurement in Leq dB(A)	
		DAY	NIGHT
13-May-21	Rampur Officer's Guest House	63.6	58.7
13-May-21	Bundia Colony Pump House	64.3	60.7
13-May-21	HBI Mine	66.7	63.2
27-May-21	Rampur Officer's Guest House	66.8	62.7
27-May-21	Bundia Colony Pump House	64.9	58.6
27-May-21	HBI Mine	66.8	61.7

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)

Authorised Signatory
CMPDI, RI-VII, LAB
BHUANESWAR

S. V. Ch
Env. Lab
CMPDI, RI-VII
BHUANESWAR



cmpdi

A Mini Ratna Company

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
13-May-21	Mine Sump of Mine No. 2	6.79	<4.0	48	36		
26-May-21	Mine Sump of Mine No. 2	6.95	<4.0	36	24		

Authorised Signatory
CMPDI, RI-VII LAB
BHUSANESWAR

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
---------	----	-----	-----	----

D. I. G.
Env. Lab
CMPDI, RI-VII
BHUSANESWAR



cmpdi

A Mini Ratna Company

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
13-May-21	Mine Sump of Mine No. 3	6.87	<4.0	34	24		
26-May-21	Mine Sump of Mine No. 3	7.04	<4.0	22	16		

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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
---------	----	-----	-----	----

Sd/- S.M. I. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratan Company

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
13-May-21	Mine Sump of Mine No. 4	7.48	<4.0	42	28		
26-May-21	Mine Sump of Mine No. 4	7.32	<4.0	28	20		

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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
---------	----	-----	-----	----

DAI/SM/c
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini-Kolha Company

TABLE--

Well Water Level Monitoring Data

Area :

Orient

Project

Orient mine no 12

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Madhuban Nagar Well Water (Reported Only)	18.2
18-May-21	Chauliberna Village Well Water (Reported Only)	11.5

Authorised Signatory
CMPDI, RI-VII, LAB
BRUBANESWAR

SAI SW
D.T.C.
Env. Lab
CMPDI, RI-VII
BRUBANESWAR



cmpdi

A Mini Ratna Company

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		
Monitoring Station				
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	2	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	4	3	1	5
pH	7.48	7.35	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	92	116	200	600
Total Hardness (Ca CO ₃)(mg/L)	104	108	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	22	38	250	1000
Total Dissolve Solid(mg/L)	214	232	500	2000
Calcium(mg/L)	25.65	17.65	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)	28.51	11.47	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

Authorised Signatory
CMPDI, RI-VII, LAS
BHUBANESWAR

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



cmpdi

A Mini Ratna Company

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	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	5	15
Odour	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	3	1	5
pH	6.99	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	72	200	600
Total Hardness (Ca CO ₃)(mg/L)	116	200	600
Iron(mg/L)	<0.1	0.3	No relaxation
Chloride(mg/L)	26	250	1000
Total Dissolve Solid(mg/L)	202	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)	41.83	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

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

O. I. C.
B. S. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

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				
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	2	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	4	1	5
pH	7.49	7.33	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	112	116	200	600
Total Hardness (Ca CO₃)(mg/L)	88	84	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	32	28	250	1000
Total Dissolve Solid(mg/L)	218	224	500	2000
Calcium(mg/L)	24.05	27.25	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)	10.16	12.35	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

Authorized Signatory
CMPDI, RI-VI, LAB
BHUBANESWAR

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



cmpdi

A Miniratna Company

TABLE--

Well Water Level Monitoring Data

Area :

Orient

Project

Orient mine no. 3

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Lajkura Village Well (Reported Only)	16.5

Signature
CMPDI, RI-VII, LAB
BHUBANESWAR

Sd/- Smt. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Miniratna Company

TABLE--

Well Water Level Monitoring Data

Area :

Orient

Project

Orient mine no. 4

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Adibasi Basti Villge Well	11.4
18-May-21	Jhopadi Basti Villge Well	

Regulatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Mini Ratna Company

TABLE--

Well Water Level Monitoring Data

Area :

Orient

Project

HBI

<i>Date of sampling</i>	<i>Name of the Station</i>	<i>Depth to Water Level (in m. bgl)</i>
18-May-21	Chingriguda Village Well	10.9
18-May-21	Ainlapali Village Well	13.6
18-May-21	Kudopali Village Well (Reported Only)	11.7

Authorized Signatory
CMPDI, RI-VII, LAB
BRUBANESWAR

MS/SC

O.T.G.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Orinet

Project:

Orient Mine No. 1 & 2

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 03; Beside Ib valley GM house.	9.88

Authorised Signatory
CMPDI, RI-VII, LAB
Bhubaneswar

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



cmpdi

A Minor Ratan Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Orinet

Project:

Orient Mine No. 3

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 05; Village Chauliberna; Inside nursing high school campus	32.67

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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



cmpdi

A Miniratna Company

Test Report

GROUND WATER LEVEL MONITORING DATA

Area:

Orient

Project:

HBI

Date of Sampling	Name of the Station	Ground Levels (in meter)
29-May-21	Piezometer No MIP 05; Village Chauliberna; Inside nursing high school campus (Reported only)	32.67

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

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

Orient UG Mines

Orient UG Mines Air monitoring stations 2021



Job No.750001

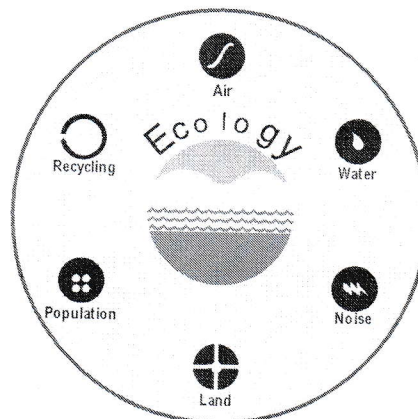
**Environmental Monitoring Report
Of
MCL HQ
For
May 2021**

IB Valley Coalfield



MCL

Mahanadi Coalfields Limited



cmpdi

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]

The test report shall not be reproduced in part or full without written approval of the competent authority

**Env. Lab
CMPDI, RI-VII
Bhubaneswar**



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 (Jagriti Vihar)	Acceptable	Permissible
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	2	3	1	5
pH	7.58	7.65	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	92	96	200	600
Total Hardness (Ca CO ₃)(mg/L)	100	108	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	18	20	250	1000
Total Dissolve Solid(mg/L)	172	184	500	2000
Calcium(mg/L)	25.65	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)	15.42	14.13	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

Authorised Signatory
CMPDI
AB

O. I. C.
W. W. Lab
CMPDI, RI-VII
Bilaspur




cmpdi

A Mini Ratna Company

Drinking Water Quality Data MCL (HQ)

Project / OCP	MCL(HQ)		Indian Drinking Standards (IS-10500):2012	
	Inlet to Water Treatment Plant (Anand Vihar)	Outlet to Water Treatment Plant (Anand Vihar)		
Monitoring Station				
Date of Sampling	8/May/2021	8/May/2021	Acceptable	Permissible
Colour(Hazen)	1	1	5	15
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Taste	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity(NTU)	1	2	1	5
pH	7.92	7.89	6.5-8.5	No relaxation
Total Alkalinity(mg/L)	88	80	200	600
Total Hardness (Ca CO ₃)(mg/L)	104	100	200	600
Iron(mg/L)	<0.1	<0.1	0.3	No relaxation
Chloride(mg/L)	16	16	250	1000
Total Dissolve Solid(mg/L)	172	174	500	2000
Calcium(mg/L)	25.65	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)	12.58	10.61	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

Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR


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