

**Environmental Monitoring Report – Sree Metaliks Limited,
At-Anra, Po- Upar Raigoda, Dist- Keonjhar
(October 2021 to March 2022)**

1. Ambient Air Quality

Sl.No.	Location	Month	Concentration	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO(mg/m ³)
1.	Near security barrak	October '21	Maximum	83.2	53.6	17.6	20.4	BDL
			Minimum	71.2	45.1	8.2	13.2	BDL
			Average	75	48	11.3	17.3	BDL
		November '21	Maximum	82.1	52.3	16.4	22.8	BDL
			Minimum	70.3	42.5	6.5	13.2	BDL
			Average	75.3	47	10.3	18.91	BDL
		December '21	Maximum	81.3	55.2	19.8	26.3	BDL
			Minimum	69.5	42.9	8.6	13.2	BDL
			Average	74.3	49.5	12.58	19.63	BDL
		January '22	Maximum	82.3	54.2	18.3	21.4	BDL
			Minimum	73.2	46.2	9.6	14.3	BDL
			Average	76.3	51.3	14.3	18.6	BDL
		February '22	Maximum	81.3	53.2	19.8	25.3	BDL
			Minimum	69.5	43.6	9.6	13.2	BDL
			Average	75.5	49.2	13.5	19.6	BDL
		March '22	Maximum	81.3	54.2	22.3	28.7	BDL
			Minimum	73.2	45.3	9.65	14.5	BDL
			Average	76.3	51.2	14.2	20.1	BDL
2.	Backside of PGP area	October '21	Maximum	88.2	58.3	19.7	25.4	BDL
			Minimum	79.3	45.2	11.4	13.2	BDL
			Average	84.0	51.67	15.16	18.7	BDL
		November '21	Maximum	89.2	59.2	25.3	28.6	BDL
			Minimum	74.5	47.3	12.4	15.4	BDL
			Average	83.2	52.89	17.96	21.48	BDL
		December '21	Maximum	88.2	59.4	25.8	27.5	BDL
			Minimum	76.3	44.3	13.6	11.3	BDL
			Average	84.2	51.13	18.99	19.28	BDL
		January '22	Maximum	86.4	63.3	19.2	23.4	BDL
			Minimum	74.3	49.2	12.4	16.2	BDL
			Average	81.0	54.67	15.17	19.8	BDL
		February '22	Maximum	88	59	20.5	23.2	BDL
			Minimum	62	45	11.5	14.1	BDL
			Average	77.63	52.25	16.48	16.68	BDL
		March '22	Maximum	86	54	21.4	22.8	BDL
			Minimum	64	43	14.5	13.6	BDL
			Average	72.7	49.4	19.7	18.6	BDL
3.	Raigurha	October '21	Maximum	72	45	15.3	20.7	BDL
			Minimum	43	26	7.9	13.4	BDL
			Average	64.8	32	11.73	16.3	BDL
		Maximum	71	40	19.3	22.8	BDL	



Annexure-I

		November '21	Minimum	54	25	11.2	16.2	BDL
			Average	63.2	32.1	15.6	20.9	BDL
		December '21	Maximum	68	36	22.6	26.7	BDL
			Minimum	51	21	14.6	15.4	BDL
			Average	60.89	29.56	18.60	21.52	BDL
		January '22	Maximum	73	49	20.9	23.7	BDL
			Minimum	46	29	16.9	17.8	BDL
			Average	66.8	35	19.33	20.3	BDL
		February '22	Maximum	82	40	19.1	24.7	BDL
			Minimum	59	24	9.4	10.1	BDL
			Average	71.25	30.75	13.69	18.31	BDL
		March '22	Maximum	73	43	19.6	24.8	BDL
			Minimum	56.2	28	11.5	13.2	BDL
			Average	65.2	34.3	16.2	20.2	BDL
		4.	Bheldih	October '21	Maximum	68.1	39	15.9
Minimum	58				26	8.3	15.3	BDL
Average	65.38				33	11.68	19.48	BDL
November '21	Maximum			72	42	15.8	23.1	BDL
	Minimum			58.3	28	7.7	19.8	BDL
	Average			64.89	34	12.2	21.47	BDL
December '21	Maximum			69.5	42	16.2	23.1	BDL
	Minimum			56	28	8.4	16.2	BDL
	Average			63.56	33.78	12.3	21.71	BDL
January '22	Maximum			70	47	15.2	20.7	BDL
	Minimum			43.6	27	8.9	13.8	BDL
	Average			64.8	37	13.3	17.3	BDL
February '22	Maximum			72	32	17.9	20.1	BDL
	Minimum			59	19	9.1	12.3	BDL
	Average			65.6	23.13	14.3	15.1	BDL
March '22	Maximum	73	39	16.2	22.4	BDL		
	Minimum	49	23	8.3	11.4	BDL		
	Average	56.78	28.22	13.33	17.57	BDL		
CPCB Standard			24 Hrly	100	60	80	80	4(1Hr)
			Annual Average	60	40	40	50	--

*BDL of CO- 0.1 mg/m³

2. Fugitive Emission Monitoring ($\mu\text{g}/\text{m}^3$)

Month	Near Admin Building	Raw material Stock Yard
October '21	455	475
November '21	443	432
December '21	512	510
January '22	469	497
February '22	495	506
March '22	435	488
Permissible Limit	1200($\mu\text{g}/\text{m}^3$)	



3. Noise Level {dB(A)}**A. Ambient Noise Level**

Location	Day (06:00-22:00 hrs.)		Night (22:00-06:00 hrs.)	
	Minimum	Maximum	Minimum	Maximum
Near security barrak	42.6	57.3	BDL	48.5
Backside of PGP area	41.8	58.9	BDL	47.1
Raigurha	42.7	55.8	BDL	45.5
Bheldih	41.5	56.8	BDL	44.7

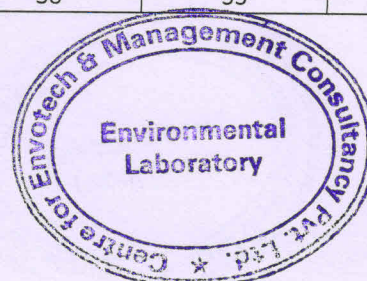
*BDL-25 dB(A)

B. Work zone noise level {dB(A)}

Location	Day (08:00-15:00 hrs.)		
	Minimum	Maximum	OSHA Standard
Near Admin Building	46.6	76.5	90
Raw material Stock Yard	45.8	77.8	90

4. Surface Water Monitoring

Parameters	Unit	Upstream Patarpagi Nala		Downstream Patarpagi Nala	
		MIN	MAX	MIN	MAX
Color	Hazen	<5	<5	<5	<5
Odour	Unobjectionable	U/O	U/O	U/O	U/O
Suspended Solids	mg/l	40	65	45	83
Turbidity	NTU	16	37	13	32
pH value	----	7.2	7.34	7.16	7.38
Temperature	°C	13	16	14	18
Oil & Grease	mg/l	<5	<5	<5	<5
Ammonical nitrogen(as N)	mg/l	3.12	4.6	3.36	3.46
Total Kjeidahal Nitrogen(as NH ₃)	mg/l	2.8	4.6	3.8	4.9
Total Hardness (as CaCO ₃)	mg/l	66	72	68	78
Iron (as Fe)	mg/l	0.3	0.71	0.22	0.56
Chloride (as Cl)	mg/l	43	53	44	56
Fluoride (as F)	mg/l	0.48	0.64	0.51	0.67
Total Dissolved Solids	mg/l	102	138	108	156
Calcium (as Ca)	mg/l	27.4	33.2	30.6	36.8
Magnesium (as Mg)	mg/l	9.4	12.4	9.6	12.6
Copper(as Cu)	mg/l	<0.03	<0.03	<0.03	<0.03
Nickel (as Ni)	mg/l	<0.05	<0.05	<0.05	<0.05
Manganese (as Mn)	mg/l	0.038	0.056	0.044	0.068
Sulfate (as SO ₄)	mg/l	28	38	33	46



Annexure-I

Nitrate (as NO ₃)	mg/l	0.36	0.52	0.32	0.54
Sulfide (as S)	mg/l	<0.1	<0.1	<0.1	<0.1
Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	<0.001	<0.001	<0.001	<0.001
Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001
Vanadium	mg/l	<0.01	<0.01	<0.01	<0.01
Cadmium (as Cd)	mg/l	<0.003	<0.003	<0.003	<0.003
Chromium(VI)	mg/l	<0.002	<0.002	<0.002	<0.002
Total Chromium	mg/l	<0.002	<0.002	<0.002	<0.002
Selenium (as Se)	mg/l	<0.001	<0.001	<0.001	<0.001
Arsenic (as As)	mg/l	<0.001	<0.001	<0.001	<0.001
Cyanide (as CN)	mg/l	ND	ND	ND	ND
Lead (as Pb)	mg/l	<0.01	<0.01	<0.01	<0.01
Zinc (as Zn)	mg/l	<0.05	<0.05	<0.05	<0.05
Anionic Detergent as MBAS	mg/l	<0.01	<0.01	<0.01	<0.01
Alkalinity (as CaCO ₃)	mg/l	58	72	62	76
Free Ammonia (N)	mg/l	0.26	0.36	0.24	0.42
Bioassay Test	%	85	97	92	98
Total Residual Chlorine	mg/l	ND	ND	ND	ND
Nitrate Nitrogen	mg/l	5.3	8.5	5.6	8.9
Coli form Organism	MPN/100ml	40	114	43	116
Dissolved Oxygen as O ₂	mg/l	6.3	7.6	5.4	7.8
BOD, 3 days at 27°C	mg/l	3.8	6.2	3.2	6.3
COD	mg/l	9.8	14.8	8.3	14.6
Electrical Conductivity(EC)	µmhos/cm	158	205	184	236
Phosphate	mg/l	0.34	0.64	0.42	0.7

5. Ground Water

Parameters	Unit	Standard as per IS 10500, 2012		Raigarha		Urumunda		Phuljhar		Amuni	
		Acceptable Limit	Permissible Limit	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Color	Hazen	5	15	<5	<5	<5	<5	<5	<5	<5	<5
Odour	--	AL	AL	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.
pH value	--	6.5-8.5	No Relaxation	7.14	7.28	7.06	7.22	7.1	7.3	6.92	7.26
Taste	--	AL	AL	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.	Agr.
Turbidity	NTU, Max	1	5	<1	<1	<1	<1	<1	<1	<1	<1
Total Dissolved Solids	mg/l, Max	500	2000	208	214	212	218	196	220	194	208
Aluminium	mg/l	0.03	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anionic Detergents	mg/l	0.2	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	mg/l	0.7	No Relaxation	ND	ND	ND	ND	ND	ND	ND	ND
Boron	mg/l	0.5	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2



Annexure-I

Calcium	mg/l	75	200	31.4	33.4	28.6	29.8	27.5	29.2	25.6	27.4
Chloride	mg/l	250	1000	31.2	32.2	27.8	29.6	29.8	30.8	27.5	29.4
Copper	mg/l	0.05	1.5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Fluoride	mg/l	1.0	1.5	0.34	0.33	0.23	0.21	0.22	0.24	0.18	0.19
Free Residual Chlorine	mg/l	0.2	1	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.3	No Relaxation	0.22	0.26	0.19	0.25	0.22	0.24	0.23	0.24
Magnesium	mg/l	30	100	10.8	11.4	12.2	15.4	12.2	12.6	12.2	13.6
Manganese	mg/l	0.1	0.3	0.006	0.012	0.008	0.012	0.006	0.008	0.01	0.014
Mineral Oil	mg/l	0.5	No Relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate	mg/l	45	No Relaxation	0.45	0.49	0.41	0.48	0.39	0.46	0.36	0.44
Phenolic Compound	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sulphate	mg/l	200	400	32	34	22	26	35	40	22	36
Sulphide	mg/l	0.05	No Relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Alkalinity	mg/l	200	600	80	82	92	96	86	88	78	82
Total Hardness	mg/l	200	600	110	112	116	120	132	134	108	110
Zinc	mg/l	5	15	0.08	0.12	0.06	0.12	0.08	0.14	0.14	0.16
Cadmium	mg/l	0.003	No Relaxation	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Cyanide	mg/l	0.05	No Relaxation	ND	ND	ND	ND	ND	ND	ND	ND
Lead	mg/l	0.01	No Relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	mg/l	0.001	No Relaxation	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Molybdenum	mg/l	0.07	No Relaxation	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/l	0.02	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Arsenic	mg/l	0.01	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Chromium	mg/l	0.05	No Relaxation	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Coliform	MPN /100ml	Absent in 100 mL Sample	Absent	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

* AL- Agreeable, ND-Not Detected



6. Stack Emission (M³/Hr)

Stack No	Description of Stack	Height from GL(M)	Fuel gas temperature (Deg C)	Stack Dia in Mtr	Gas Volume (CuM/Hr)	Velocity (m/s)	quantity of emission (M3/Hr)
1	Bag filter of Bentonite hopper	23.00	40	0.5	5000	7	4945.5
2	Bag filter of Ash hopper	15.00	40	0.5	4000	6	4239.0
3	Mixer	15.00	40	0.3	3000	12	3052.1
4	ESP Connected to TG	50.00	150	3	500000	19	483246.0

