

The Sandur Manganese & Iron Ores Limited

(An ISO 9001:2015; ISO 14001:2015 and 45001:2018 certified company)
CIN: L85110KA1954PLC000759; Website: www.sandurgroup.com

REGISTERED OFFICE

'SATYALAYA', No.266
Ward No.1, Palace Road
Sandur - 583 119, Ballari District
Karnataka, India
Tel: +91 8395 260301/ 283173-199
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CORPORATE OFFICE

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Ref No: SMIORE/PLANT/ENV/MR/2023-24/94

05.10.2023

To,
The Environmental Officer,
Regional Office & Zonal office
Karnataka State Pollution Control Board
Sri Sai Sharan plaza, No. 71/A, 2nd floor,
Dam road, Hosapete- 583203, Vijayanagar District.

Subject: Submission of monthly environmental monitoring report for the month of
September-2023.

Reference: 1) CFO No. AW-329576 PCB ID 29470 Dated 02.02.2022
2) Amendment CFO No. AW-335581 PCB ID 29470 Dated 17.01.2023

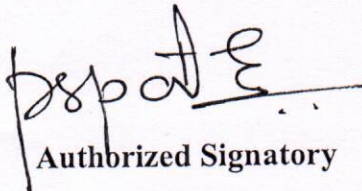
Dear Sir,

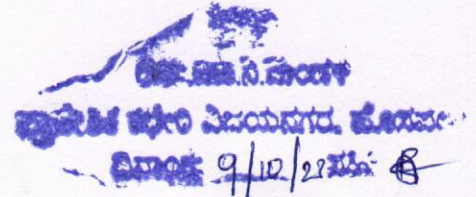
With reference to the above subject, herewith we are submitting the environmental monitoring report of our plant for the month of **September-2023** for your kind information.

Kindly acknowledge receipt of the same.

Thanking you,

The Sandur Manganese & Iron Ores Limited,


Authorized Signatory


Sandur Manganese & Iron Ores Limited
Date: 9/10/2023

Encl: Environmental Monitoring Report- September 2023

MINES OFFICE: Deogiri - 583112, Sandur Taluk, Ballari District
Tel: +91 8395 271025 / 28 / 29 / 40; Fax: +91 8395 271066

PLANT OFFICE: Metal & Ferroalloy Plant, Vyasankere, Mariyammanahalli - 583 222, Hosapete Taluk, Ballari District
Tel: +91 8394 244450 / 244335

ENVIRONMENTAL MONITORING REPORT

September, 2023

Project : The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village,
Hospet Taluk,

CONSULTANT

MINERAL ENGINEERING SERVICES
(Accredited by QCI-NABET ORG000756)
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ENVIRONMENTAL LABORATORY
Unit of Mineral Engineering Services)
(Accredited by NABL &, MOEF&CC Under
E(P) 1986)
#948, 2nd Cross, Kammanahalli Main
Road, St Thomas Town Post, Bangalore-
560 084, Karnataka,

LISsaT OF TABLES

SL. NO.	PARTICULARS	TABLE NO.
1	Test Report of Ambient Air Quality	1 to 4
2	Test Report of Fugitive Emission	5 to 8
3	Stack Monitoring report	9 & 18
4	Ambient Noise Level Data	19
6	Fugitive Noise Level Data	20 & 21
7	Ground Water Test Report As per IS 10500	22 & 25



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TEST REPORT

Table No. 1

AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A1, Near Existing AAQMS 01 (SMIORE Schools)							
Duration : 24 Hrs							
Issue date : 04.10.2023							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2023	N/23/09/2-0151	8	12	52	29	<20	<1
09.09.2023	N/23/09/3-0022	11	10	55	32	<20	<1
11.09.2023	N/23/09/4-0029	11	13	47	23	<20	<1
12.09.2023	N/23/09/4-0076	9	11	50	22	<20	<1
22.09.2023	N/23/09/5-0130	10	11	48	29	<20	<1
23.09.2023	N/23/09/5-0170	12	13	56	24	<20	<1
25.09.2023	N/23/10/1-0017	7	9	48	22	<20	<1
26.09.2023	N/23/10/1-0053	6	12	53	25	<20	<1
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2023	N/23/09/2-0151	0.13	<0.1	<0.5	<0.5	0.20	24
09.09.2023	N/23/09/3-0022	0.15	<0.1	<0.5	<0.5	0.28	28
11.09.2023	N/23/09/4-0029	<0.1	<0.1	<0.5	<0.5	0.33	26
12.09.2023	N/23/09/4-0076	0.11	<0.1	<0.5	<0.5	0.24	27
22.09.2023	N/23/09/5-0130	0.14	<0.1	<0.5	<0.5	0.30	23
23.09.2023	N/23/09/5-0170	0.12	<0.1	<0.5	<0.5	0.35	20
25.09.2023	N/23/10/1-0017	0.10	<0.1	<0.5	<0.5	0.29	25
26.09.2023	N/23/10/1-0053	0.13	<0.1	<0.5	<0.5	<0.2	26
Limits for Industrial , Residential, Rural and other Areas		1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

Arshiya Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No. 2

AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.							
(Metal & Ferro Alloys Plant),							
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A2, Existing Water Reservoir (Near WTP Plant)							
Duration : 24 Hrs							
Issue date : 04.10.2023							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2023	N/23/09/2-0152	8	10	57	32	<20	<1
09.09.2023	N/23/09/3-0023	12	11	52	29	<20	<1
11.09.2023	N/23/09/4-0030	11	12	44	24	<20	<1
12.09.2023	N/23/09/4-0077	8	13	54	26	<20	<1
22.09.2023	N/23/09/5-0131	7	10	50	24	<20	<1
23.09.2023	N/23/09/5-0171	10	11	41	21	<20	<1
25.09.2023	N/23/10/1-0018	6	12	48	22	<20	<1
26.09.2023	N/23/10/1-0054	11	10	46	25	<20	<1
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2023	N/23/09/2-0152	0.11	<0.1	<0.5	<0.5	0.25	20
09.09.2023	N/23/09/3-0023	<0.1	<0.1	<0.5	<0.5	0.30	24
11.09.2023	N/23/09/4-0030	0.10	<0.1	<0.5	<0.5	0.25	27
12.09.2023	N/23/09/4-0077	0.15	<0.1	<0.5	<0.5	0.22	27
22.09.2023	N/23/09/5-0131	0.10	<0.1	<0.5	<0.5	<0.2	22
23.09.2023	N/23/09/5-0171	0.13	<0.1	<0.5	<0.5	0.24	25
25.09.2023	N/23/10/1-0018	0.15	<0.1	<0.5	<0.5	0.32	26
26.09.2023	N/23/10/1-0054	0.11	<0.1	<0.5	<0.5	0.29	21
Limits for Industrial , Residential, Rural and other Areas		1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

Arshiya Kousar
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TEST REPORT

Table No. 3

AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.							
(Metal & Ferro Alloys Plant),							
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A3, Galemmanagudi							
Duration : 24 Hrs							
Issue date : 04.10.2023							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2023	N/23/09/2-0153	9	13	37	16	<20	<1
09.09.2023	N/23/09/3-0024	8	13	40	25	<20	<1
11.09.2023	N/23/09/4-0031	9	10	45	27	<20	<1
12.09.2023	N/23/09/4-0078	11	13	52	30	<20	<1
22.09.2023	N/23/09/5-0132	9	10	48	24	<20	<1
23.09.2023	N/23/09/5-0172	11	12	53	27	<20	<1
25.09.2023	N/23/10/1-0019	7	10	50	25	<20	<1
26.09.2023	N/23/10/1-0055	11	13	46	26	<20	<1
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2023	N/23/09/2-0153	0.10	<0.1	<0.5	<0.5	0.30	27
09.09.2023	N/23/09/3-0024	0.12	<0.1	<0.5	<0.5	0.35	23
11.09.2023	N/23/09/4-0031	0.10	<0.1	<0.5	<0.5	0.31	28
12.09.2023	N/23/09/4-0078	0.14	<0.1	<0.5	<0.5	0.25	25
22.09.2023	N/23/09/5-0132	0.10	<0.1	<0.5	<0.5	0.22	23
23.09.2023	N/23/09/5-0172	<0.1	<0.1	<0.5	<0.5	<0.2	20
25.09.2023	N/23/10/1-0019	0.15	<0.1	<0.5	<0.5	<0.2	29
26.09.2023	N/23/10/1-0055	0.13	<0.1	<0.5	<0.5	<0.2	27
Limits for Industrial , Residential, Rural and other Areas		1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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TEST REPORT

Table No. 4

AMBIENT AIR QUALITY

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Sample Collected by : Environmental Laboratory Representative							
Station at & Code : A4, Near Plant Railway Siding							
Duration : 24 Hrs							
Issue date : 04.10.2023							
Reference IS 5182 & Lab SOP							
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2023	N/23/09/2-0154	6	9	41	22	<20	<1
09.09.2023	N/23/09/3-0025	8	12	44	24	<20	<1
11.09.2023	N/23/09/4-0032	10	11	48	25	<20	<1
12.09.2023	N/23/09/4-0079	12	13	50	28	<20	<1
22.09.2023	N/23/09/5-0133	9	10	54	29	<20	<1
23.09.2023	N/23/09/5-0173	11	12	45	26	<20	<1
25.09.2023	N/23/10/1-0020	8	12	44	23	<20	<1
26.09.2023	N/23/10/1-0056	9	10	51	29	<20	<1
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lab Code	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2023	N/23/09/2-0154	<0.1	<0.1	<0.5	<0.5	0.32	21
09.09.2023	N/23/09/3-0025	0.12	<0.1	<0.5	<0.5	0.28	24
11.09.2023	N/23/09/4-0032	0.15	<0.1	<0.5	<0.5	0.24	26
12.09.2023	N/23/09/4-0079	0.14	<0.1	<0.5	<0.5	0.33	23
22.09.2023	N/23/09/5-0133	0.10	<0.1	<0.5	<0.5	0.35	20
23.09.2023	N/23/09/5-0173	<0.1	<0.1	<0.5	<0.5	0.24	28
25.09.2023	N/23/10/1-0020	0.11	<0.1	<0.5	<0.5	0.26	25
26.09.2023	N/23/10/1-0056	0.13	<0.1	<0.5	<0.5	0.28	26
Limits for Industrial , Residential, Rural and other Areas		1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

Arshiya Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

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TEST REPORT

Table No. 5

Analysis Report of Fugitive Emission

Report No.N000123093

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.,
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,

Sample Collected by : Environmental Laboratory Representative
Station at & Code : Near Battery Area (Coke Oven)
Duration : 08 Hrs
Issue date : 04.10.2023
Reference IS 5182 & Lab Sop

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³	Benzo (a) Pyrene (BaP) µg/m ³
08.09.2023	N/23/09/3-0001	11	14	324	0.11	0.32	<0.0005
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012		150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr	2 8 Hrs

Note : * Parameters monitored for period of 1 hr

Arshiya Kousar
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TEST REPORT

Table No. 6

Analysis Report of Fugitive Emission

Report No.N002623093

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.,
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Sample Collected by : Environmental Laboratory Representative
Station at & Code : Coal Storage area (Coke Oven)
Duration : 08 Hrs
Issue date : 04.10.2023
Reference IS 5182 & Lab Sop

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³	Benzo (a) Pyrene (BaP) µg/m ³
09.09.2023	N/23/09/3-0026	14	18	324	0.18	0.41	<0.0005
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012		150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr	2 8 Hrs

Note : * Parameters monitored for period of 1 hr

Arshiya Kousar
ARSHIYA KOUSAR

Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No. 7

Analysis Report of Fugitive Emission

Report No.N003323094

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.,
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,

Sample Collected | : Environmental Laboratory Representative
Station at & Code : Finished goods yard in between F3 & F5 (M&FA)
Duration : 08 Hrs
Issue date : 04.10.2023
Reference IS 5182 & Lab Sop

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
11.09.2023	N/23/09/4-0033	11	15	296	<0.1	0.21
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012		150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr

Arshya Kousar
ARSHYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No. 8

Analysis Report of Fugitive Emission

Report No.N008023094

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.,
(Metal & Ferro Alloys Plant),
Vyasnakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Sample Collected | : Environmental Laboratory Representative
Station at & Code : Raw martial storage area (M&FA)
Duration : 08 Hrs
Issue date : 04.10.2023
Reference IS 5182 & Lab Sop

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	Lead (Pb), µg/m ³	Carbon Monoxide* (CO), mg/m ³
12.09.2023	N/23/09/4-0080	9	11	312	<0.1	<0.2
Permissible limits for Fugitive Emissions as per G.S.R.277E Dated on 31.03.2012		150 8 Hrs	120 8 Hrs	3000 8 Hrs	2.0 8 Hrs	10 1 Hr

Note : * Parameters monitored for period of 1 hr

Arshiyakousar
ARSHIYAKOUSAR
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TEST REPORT

Table No. 9

Stack Monitoring Report

Report No. : N017423095

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Location : ARC Furnace area
Stack ID : Stack Attached to Furnace - 3
Sample Collected by : Environmental Laboratory Representative
Date of Collection : 23.09.2023
Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1
Date of Sample Receipt : 25.09.2023
Lab Code : N/23/09/5-0174
Issue date : 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	99
4	Velocity (m/s)	77.61
5	Stack Height (M)	35
6	Stack Diameter (M)	2.5
7	Cross Sectional Area in meter square (m^2)	4.9109
8	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	97818
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref -	Test Method
1	Particulate Matter	mg/Nm^3	35.20	150		IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO_2),	mg/Nm^3	20.00	--		IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO_2)	mg/Nm^3	31.00	--		IS: 11255(Part-7) 2017
4	CO	%	0.45	--		flue gas analyser
4	Oxygen (O_2)	%	17.90	--		flue gas analyser

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TEST REPORT Stack Monitoring Report

Table No. 10

Report No. : N002123101

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -01
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 25.09.2023
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 30.09.2023
Lab Code	: N/23/10/1-0021
Issue date	: 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	299
4	Velocity (m/s)	6.93
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m ²)	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	281240
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref - Test Method
1	Particulate Matter	mg/Nm ³	40.21	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO ₂),	mg/Nm ³	19.20	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO ₂)	mg/Nm ³	68.50	500	IS: 11255(Part-7) 2017
4	CO	%	0.54	Max1%	flue gas analyser
5	Oxygen (O ₂)	%	19.20	--	flue gas analyser

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TEST REPORT Stack Monitoring Report

Table No. 11

Report No. : N002223101

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,	
Location	: Coke Oven Plant
Stack ID	: Stack Attached to WHRB -02
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 25.09.2023
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 30.09.2023
Lab Code	: N/23/10/1-0022
Issue date	: 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	26
3	Stack Temperature (°C)	210
4	Velocity (m/s)	8.5
5	Stack Height (M)	60
6	Stack Diameter (M)	4.6
7	Cross Sectional Area in meter square (m ²)	16.62647
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	284825.0
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref - Test Method
1	Particulate Matter	mg/Nm ³	36.20	50	IS: 11255(Part-1) 2014
2	Sulphur Dioxide (SO ₂),	mg/Nm ³	34.25	800	IS: 11255(Part-2) 2014
3	Nitrogen Dioxide (NO ₂)	mg/Nm ³	36.20	500	IS: 11255(Part-7) 2017
4	CO	%	0.33	Max1%	flue gas analyser
5	Oxygen (O ₂)	%	6.80	--	flue gas analyser

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TEST REPORT Stack Monitoring Report

Table No. 12

Report No. : N005723101

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Location : Coke Oven Plant

Stack ID : Stack Attached to Coal Crushing

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 26.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 30.09.2023

Lab Code : N/23/10/1-0057

Issue date : 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	28
3	Stack Temperature (°C)	58
4	Velocity (m/s)	6.80
5	Stack Height (M)	15
6	Stack Diameter (M)	0.8
7	Cross Sectional Area in meter square (m ²)	0.4419
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	10052
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref -	Test Method
1	Particulate Matter	mg/Nm ³	32.00	50		IS: 11255(Part-1) 2014

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TEST REPORT Stack Monitoring Report

Table No. 13

Report No. : N005823101

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Location : Coke Oven Plant

Stack ID : Stack Attached to Coke Cutter

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 26.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 30.09.2023

Lab Code : N/23/10/1-0058

Issue date : 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	28
3	Stack Temperature (°C)	56
4	Velocity (m/s)	6.51
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square (m ²)	0.3850
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	7415
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref -	Test Method
1	Particulate Matter	mg/Nm ³	33.20	50		IS: 11255(Part-1) 2014

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TEST REPORT Stack Monitoring Report

Table No. 14

Report No. : N005923101

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Location : Coke Oven Plant

Stack ID : Stack Attached to Coke Screening & Store

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 26.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 30.09.2023

Lab Code : N/23/10/1-0059

Issue date : 04.10.2023

STACK DETAILS

1	Fuel Used	-
2	Ambient Temperature (°C)	28
3	Stack Temperature (°C)	50
4	Velocity (m/s)	6.00
5	Stack Height (M)	15
6	Stack Diameter (M)	0.7
7	Cross Sectional Area in meter square (m ²)	0.3850
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	6973
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Tolerance Limits G.S.R. 227(E) dated 31.03.2012	Ref -	Test Method
1	Particulate Matter	mg/Nm ³	31.40	50		IS: 11255(Part-1) 2014

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TEST REPORT Stack Monitoring Report

Table No. 15

Report No. : N022323094

Name and Address of the Industry	: Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,
Stack ID	: DG Set 750 KVA (Coke Oven)
Sample Collected by	: Environmental Laboratory Representative
Date of Collection	: 16.09.2023
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1
Date of Sample Receipt	: 18.09.2023
Lab Code	: N/23/09/4-0223
Issue date	: 05.10.2023

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	27
3	Stack Temperature (°C)	188
4	Velocity (m/s)	9.07
5	Stack Height (M)	15.0
6	Stack diameter (M)	0.30
7	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	87
8	Sample Condition When Received	Satisfactory
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
10	Serial No. of the Equipment	338 DTH 14
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
12	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.065	<0.2
2	CO	g/Kw-hr	0.10	<3.5
3	Nox +HC	g/Kw-hr	0.19	<4.0

INFERENCE

as per KSPCB

Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT Stack Monitoring Report

Table No. 16

Report No. : N022423094

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.

(Metal & Ferro Alloys Plant),

Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Stack ID : DG Set 250 KVA at VHT-2

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 16.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 18.09.2023

Lab Code : N/23/09/4-0224

Issue date : 05.10.2023

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	27
3	Stack Temperature (°C)	161
4	Velocity (m/s)	19.70
5	Stack Height (M)	5.0
6	Stack diameter (M)	0.20
7	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	383
8	Sample Condition When Received	Satisfactory
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
10	Serial No. of the Equipment	338 DTH 14
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
12	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.11	<0.2
2	CO	g/Kw-hr	0.24	<3.5
3	Nox +HC	g/Kw-hr	0.74	<4.0

INFERENCE

as per KSPCB

Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT Stack Monitoring Report

Table No. 17

Report No. : N022523094

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.

(Metal & Ferro Alloys Plant),

Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Stack ID : DG Set 250 KVA at New baghouse

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 16.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 18.09.2023

Lab Code : N/23/09/4-0225

Issue date : 05.10.2023

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	27
3	Stack Temperature (°C)	255
4	Velocity (m/s)	16.35
5	Stack Height (M)	5.0
6	Stack diameter (M)	0.20
7	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	1068
8	Sample Condition When Received	Satisfactory
9	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
10	Serial No. of the Equipment	338 DTH 14
11	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
12	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.07	<0.2
2	CO	g/Kw-hr	0.44	<3.5
3	Nox +HC	g/Kw-hr	0.90	<4.0

INFERENCE

as per KSPCB

Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT Stack Monitoring Report

Table No. 18

Report No. : N022623094

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.

(Metal & Ferro Alloys Plant),

Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Stack ID : DG Set 625 KVA (Power Plant)

Sample Collected by : Environmental Laboratory Representative

Date of Collection : 16.09.2023

Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1

Date of Sample Receipt : 18.09.2023

Lab Code : N/23/09/4-0226

Issue date : 05.10.2023

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	27
3	Stack Temperature (°C)	402
4	Velocity (m/s)	19.99
5	Stack Height (M)	15.0
6	Stack diameter (M)	0.30
8	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	523
9	Sample Condition When Received	Satisfactory
10	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
11	Serial No. of the Equipment	338 DTH 14
12	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
13	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.092	<0.2
2	CO	g/Kw-hr	0.46	<3.5
3	Nox +HC	g/Kw-hr	0.85	<4.0

INFERENCE

as per KSPCB

Report Status - The measured values for the above parameters for those standards have been specified were observed to be within the said standards

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TEST REPORT

Table No. 19

AMBIENT NOISE LEVEL DATA

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vysanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,							
Particulars of Sample Collected : Ambient Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)							
Sample Collected by : Mineral Engineering Services							
Date of sample collection : 09.09.2023							
Date of sample receipt : 11.09.2023							
Issue Date : 04.10.2023							
Sampling & Test Method : IS:9989							
Code No.	Monitoring stations	Day			Night		
		(06.00 Am to 10.00 Pm)			(10.00 Pm to 06.00 Am)		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Core zone							
N1	Near Existing AAQMS 01 (SMIORE Schools)	40.1	55.6	65.0	34.0	42.6	47.5
N2	Existing Water Reservoir (Near WTP Plant)	40.0	49.5	57.5	38.0	45.0	49.0
Buffer zone							
N3	Galemmanagudi	41.8	50.6	55.9	34.6	42.7	48.0
N4	Vysanakere Village	36.0	48.5	54.0	34.0	43.5	46.0
N5	Hanumanhalli	38.0	51.7	57.0	35.3	43.0	49.0
<u>Permissible Limits of Ambient Noise Levels as per CPCB Guidelines</u>							
Leq. Limit dB(A)							
Day Night							
Industrial areas		75		70			
Commercial area		65		55			
Residential area		55		45			

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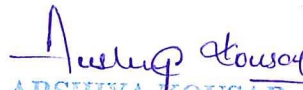
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TEST REPORT

Table No.20

FUGITIVE NOISE LEVEL DATA

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd. (Metal & Ferro Alloys Plant), Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,					
Particulars of Sample Collected : Work zone Noise Level collected through Sound Level Meter (HTC SL-1352 Data Logger)					
Sample Collected by : Mineral Engineering Services					
Date of sample collection : 11.09.2023					
Date of sample receipt : 12.09.2023					
Issue Date : 04.10.2023					
Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Corezone					
1	ARC Furnace -3 area	48.0	61.9	71.0	During operation
2	ARC Furnace -5 area	40.0	51.6	63.1	During operation
3	Near WHRB -1	45.0	61.6	75.0	During operation
4	Near WHRB -2	42.0	61.2	68.0	During operation
5	Near Power plant turbine	30.2	42.0	49.0	During shut down
Permissible limits as per ILO Code of Practice					
For Unprotected ear - 8 hrs working shift					
Warning limit - 85 dB(A)					
Danger limit - 90 dB(A)					
Worker not to be exposed for more than 115 dB(A)					
With ear protection -					
130 dB(A) 'Impulse' or 120 dB(A) 'Fast'					
No entry when noise level exceeds 140 dB(A)					
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines					
Leq. Limit dB(A)					
Day Night					
Industrial areas 75 70					
Commercial area 65 55					
Residential area 55 45					


ARSHIYA KOUSAR
 Dy. T.M. Chemical

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TEST REPORT

Table No.21

FUGITIVE NOISE LEVEL DATA

Name and Address of the Industry : Ms. The Sandur Manganese & Iron Ores Ltd.
(Metal & Ferro Alloys Plant),
Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist ,

Particulars of Sample Collected : DG Noise Level collected through Sound
Level Meter (HTC SL-1352 Data Logger)

Sample Collected by : Mineral Engineering Services

Date of sample collection : 16.09.2023

Date of sample receipt : 17.09.2023

Issue Date : 04.10.2023

Code No.	Sample Location	Remarks	Parameters	
			Sound level in dB(A)	
			L_{eq}	CPCB Std.
N1	Stack Attached to 750 KVA (Coke Oven)	Monitoring done at 1mts distance from DG Set	67.8	75.0
N2	Stack Attached to 250 KVA at VHT-2		71.1	
N3	Stack Attached to 250 KVA at New Baghouse		70.2	
N4	Stack Attached to 625 KVA (Power Plant)		69.8	

Note

- Day Time is reckoned between 6 Am to 10 PM
- Night Time is reckoned between 10 Pm to 6Am
- L_{eq} It is energy means of the noise level over a specified period.
- "dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale 'A' which is related to human hearing.
- A "decible" is a unit in which noise is measured.
- "A", in dB(A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristic of human ear.

INFERENCE

As per CPCB standards,
Report status: - The measured values for the above locations
are within the standards

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TEST REPORT

Table No. 22

Report No : ED001823093

Name of the Client : M/s. M/s. Sandur Manganese & Iron Ores Limited
(Metal & Ferro Alloys Plant),
Name of the Project : Vyasankere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected : DW1 - Plant Drinking water
Sample Collected by : Environmental Laboratory Representative
Date of sample collection : 11.09.2023
Date of sample receipt : 12.09.2023
Lab Code : ED/23/09/3-0018
Issue Date : 23.09.2023
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	5	5	15	IS:3025 (P-4)02021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.04	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	4.7	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	76	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	45	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of IS:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	3.20	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	15.60	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	<0.005	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg),mg/l, Max	2.4	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	0.18	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	4.25	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	20.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	18.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform /100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

(Signature)
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TEST REPORT

Table No.23

Report No : ED001923093

Name of the Client : M/s. M/s. Sandur Manganese & Iron Ores Limited
(Metal & Ferro Alloys Plant),
Name of the Project : Vyasnakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected : GW2 - Vyasnakere Village Bore water
Sample Collected by : Environmental Laboratory Representative
Date of sample collection : 11.09.2023
Date of sample receipt : 12.09.2023
Lab Code : ED/23/09/3-0019
Issue Date : 23.09.2023
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Results	Desirable Limts	Permissible Limts	Method of Testing
1	Colour (Hazen Units), Max	<1	5	15	IS:3025 (P-4)02021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.88	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	<0.1	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	683.0	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	420	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	44.08	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	66.44	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	<0.005	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg)mg/l, Max	31.6	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	3.93	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	59.75	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	260.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	240.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform /100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

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TEST REPORT

Table No.:24

Report No : ED002023093

Name of the Client : M/s. M/s. Sandur Manganese & Iron Ores Limited
(Metal & Ferro Alloys Plant),
Name of the Project : Vyasanakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected : GW3 - Galemmanagudi Bore water
Sample Collected by : Environmental Laboratory Representative
Date of sample collection : 11.09.2023
Date of sample receipt : 12.09.2023
Lab Code : ED/23/09/3-0020
Issue Date : 23.09.2023
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Results	Desirable Limits	Permissible Limits	Method of Testing
1	Colour (Hazen Units), Max	<1	5	15	IS:3025 (P-4)02021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.83	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	<0.1	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	2137	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	1310	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	<0.005	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	104.20	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	<0.005	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	459.60	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	<0.1	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	0.044	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg),mg/l, Max	128.8	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	2.86	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	66.52	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	470.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	790.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform /100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

(Signature)
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TEST REPORT

Table No. 25

Reort No : ED002123093

Name of the Client : M/s. M/s. Sandur Manganese & Iron Ores Limited
(Metal & Ferro Alloys Plant),
Name of the Project : Vyasnakere, Hanumanahalli Village, Hospet Taluk, Ballari Dist,
Particulars of sample collected : GW4 - Hanumanahalli Bore water
Sample Collected by : Environmental Laboratory Representaive
Date of sample collection : 11.09.2023
Date of sample receipt : 12.09.2023
Lab Code : ED/23/09/3-0020
Issue Date : 23.09.2023
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Parameters	Results	Desirable Limts	Permissible Limts	Method of Testing
1	Colour (Hazen Units), Max	<1	5	15	IS:3025 (P-4)02021
2	Odour, Max	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.74	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11)2022
4	Taste	Agreeable	Agreeable	Agreeable	IS:3025 (P- 8)1984 RA 2017
5	Turbidity,NTU, Max	0.14	1	5	IS:3025 (P-10)1984 RA2017
6	Electrical Conductivity (µmhos/cm)	2859.0	--	--	IS 3025 (P-14)
7	Total Dissolved Solids,mg/l, Max	1760	500	2000	IS:3025 (P-16)1984 RA2017
8	Aluminium (as Al), Max	<0.01	0.03	0.2	IS:3025 (P-55)2003 RA2019
9	Ammonia (as total Ammonia -N),mg/l, Max	<0.1	0.5	0.5	IS:3025 (P-34)1988 RA2019
10	Anionic Detergents (as MBAS),mg/l, Max	<0.1	0.2	1.0	Annex K of Is:13428Amm 11 2022
11	Barium (as Ba), mg/l, Max	0.269	0.7	0.7	IS:3025(P-2)2019
12	Boron (as B), mg/l, Max	<0.1	0.5	2.4	IS:3025 (Part-57)2021
13	Calcium (as Ca),mg/l, Max	60.12	75	200	IS:3025 (P-40)1991 RA 2019
14	Copper (as Cu),mg/l, Max	0.051	0.05	1.5	IS:3025 (P-2)2019
15	Chloride as Cl (mg/l),mg/l, Max	545.17	250	1000	IS:3025 (P-32)1988 RA 2019
16	Fluoride (as F),mg/l, Max	0.15	1	1.5	IS:3025 (P-60)2008 RA 2019
17	Residual, Free Chlorine,mg/l, Max	<0.1	0.2	1	IS:3025 (P-26)2021
18	Chloramines as C12, Max	<0.1	4	4	IS:3025(P-26)2021
19	Iron (as Fe),mg/l, Max	0.204	1.0	1.0	IS:3025 (Part-2)2019
20	Magnesium (as Mg)mg/l, Max	109.37	30	100	IS:3025 (P-46)1994 RA 2019
21	Manganese (as Mn),mg/l, Max	<0.001	0.1	0.3	IS:3025 (P-2)2019
22	Mineral Oil,mg/l, Max	<0.5	1.0	1.0	Clause 6 of IS 3025 (P-39) 2021
23	Nitrates (as NO ₃),mg/l, Max	12.50	45	45	IS:3025 (P-34) 1988 RA 2019
24	Phenolics (as C ₆ H ₅ OH),mg/l, Max	<0.001	0.001	0.002	IS:3025 (P-43)Sec 1 2022
25	Selenium (as Se),mg/l, Max	<0.005	0.01	0.01	IS:3025(P-2)2019
26	Silver (as Ag), mg/l, Max	<0.005	0.1	0.1	IS:3025(P-2)2019
27	Molybdenum (as Mo), mg/l, Max	<0.001	0.07	0.07	IS:3025 (P-2)2019
28	Sulphates (as SO ₄),mg/l, Max	165.0	200	400	IS:3025 (P-24) Sec 1 2022
29	Sulphide (as H ₂ S) , mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-29):1986 RA 2019
30	Alkalinity (as CaCO ₃) mg/l, Max	625.0	200	600	IS:3025 (P-23):1986 RA 2019
31	Total Hardness (as CaCO ₃),mg/l, Max	600.0	200	600	IS:3025 (P-21):2009 RA 2019
32	Zinc (as Zn),mg/l, Max	<0.005	5	15	IS:3025 (P-2) 2019
33	Cadmium (as Cd),mg/l, Max	<0.001	0.003	0.003	IS:3025 (P-2)2019
34	Cyanide (as CN),mg/l, Max	<0.01	0.05	0.05	IS:3025 (P-27)Sec 1 2021
35	Lead (as Pb),mg/l, Max	<0.005	0.01	0.01	IS:3025 (P-2)2019
36	Mercury (as Hg),mg/l, Max	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
37	Nickel (as Ni),mg/l, Max	<0.001	0.02	0.02	IS:3025 (P-2) 2019
38	Arsenic (as As),mg/l, Max	<0.002	0.01	0.01	IS:3025 (P-2)2019
39	Total Chromium (as Cr),mg/l, Max	<0.001	0.05	0.05	IS:3025 (P-52)2014
40	Escherichia coli/100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021
41	Total Coliform /100ml	Not Detected	Shell Not be detectable in any 100ml sample	Shell Not be detectable in any 100ml sample	IS:15185:2016 RA 2021

"END OF REPORT"

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