

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
Fax: +91 8395 260473



CORPORATE OFFICE

'SANDUR HOUSE', No.9
Bellary Road, Sadashivanagar
Bengaluru - 560 080
Karnataka, India
Tel: +91 80 4152 0176 - 79 / 4547 3000
Fax: +91 80 4152 0182

Ref No: SMIORE/MINES/ENV/2024-25/2679/775

04 September 2024

To,
The Environmental Officer,
Karnataka State Pollution Control Board,
Ward No.25, 4th Main Road,
Kuvempu Nagar,
Ballari - 583104

Dear Sir,

Sub: Submission of reports pertaining to monitoring of environmental parameters for the month of August 2024 in respect of Mining Lease No. 2679.

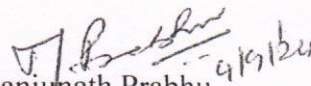
Ref: 1. Environmental Clearance No. 110015/88/2006-IA.II(M) dated 24 January 2007.
2. Consent for Operation No. AW-337273 dated 10 April 2023.

With reference to the letters cited above, we are enclosing herewith environmental monitoring reports prepared after monitoring the stipulated environmental parameters for the month of August 2024 in respect of Mining Lease No. 2679 of The Sandur Manganese & Iron Ores Limited.

Kindly acknowledge the receipt of the reports.

Thank you,

for The Sandur Manganese & Iron Ores Limited,


Manjunath Prabhu,
Chief Operating Officer



Encl: Monitoring Reports

MINES OFFICE: Deogiri - 583112, Sandur Taluk, Ballari District

Tel: +91 8395 271025 / 28 / 29 / 40; Fax: +91 8395 271066

PLANT OFFICE: M... & F... Ballari - 583112, Sandur Taluk, Ballari District



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**ENVIRONMENTAL LABORATORY (UNIT OF MINERAL
ENGINEERING SERVICES)**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

#948, 2ND CROSS, ST. THOMAS TOWN POST, KAMMANAHALLI MAIN ROAD, BENGALURU,
BENGALURU URBAN, KARNATAKA, INDIA

in the field of

TESTING

Certificate Number: TC-6172

Issue Date: 24/05/2023

Valid Until:

23/05/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : ENVIRONMENTAL LABORATORY (UNIT OF MINERAL ENGINEERING
SERVICES)

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer



केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

F.No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt./ (60)

Dated: 28th January 2023
07th June 2023

Recognition Certificate

To,

Head of Laboratory,
M/s Environmental Laboratory (Unit of Mineral Engineering Services),
#948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084,
Karnataka.

Subject: Recognition of M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka, as Environmental laboratory under the Environmental (Protection) Act- 1986.

Sir,

I am directed to refer the online application, dated 27/10/2022 for the recognition of your laboratory under Environmental (Protection) Act, 1986. Based on the recommendations of the concerned Division, approval of Competent Authority for recognition of Environmental laboratories and your acceptance of the revised terms and conditions at Annexure-III & IV of the guidelines for recognition of environmental laboratories, CPCB approves the renewal of recognition M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka and shall be notified in the Gazette of India. Considering the current requirement of mandatory accreditation/ certifications of the laboratory, this recognition shall be valid up to 23/05/2025.

2. As sought in the aforementioned application, M/s Environmental Laboratory (Unit of Mineral Engineering Services), #948, 2nd Cross, St. Thomas Town Post, Kammanahalli Road, Bengaluru--560084, Karnataka may undertake the following tests:

- Physical Tests**-Conductivity, Colour, pH, Fixed & Volatile Solids, Total Solids, Total Dissolved Solids, Total Suspended Solids, Turbidity, Temperature, Velocity & Discharge Measurement of Industrial Effluent Stream, Flocculation Test (Jar test), Odour, Salinity, Settleable Solids and Sludge Volume Index.
- Inorganic (General and Non-metallic):** Acidity, Alkalinity, Ammonical Nitrogen, Chloride, Chlorine Residual, Dissolved Oxygen, Fluoride, Total Hardness, Total Kjeldahl Nitrogen (TKN), Nitrite Nitrogen, Nitrate Nitrogen, Phosphate, Sulphate, , Silica, Cyanide and Sulphide.
- Inorganic (Trace Metals):** Boron, Cadmium, Calcium, Total Chromium, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium Absorption Ratio, Zinc, Arsenic, Aluminium, Barium, Selenium, Tin, Antimony, Cobalt and Vanadium,
- Organics (General) and Trace Organics:** Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Oil and Grease, Phenolic Compounds, Pesticides (each) (Organo-Chlorine and Organo Nitrogen-Phosphorus), Surfactant, Tanin & Lignin, Poly-Chlorinated biphenyl (PCB's) each, Poly-Nuclear Aromatic Hydrocarbon (PAH).
- Microbiological Test:** Total Coliform, Faecal Coliform, *E. coli*, *Faecal Streptococci* and Total Plate Count.
- Toxicological Tests:** Bioassay Method for Evaluation of Toxicity using Fish and Measurement of Toxicity Using Daphnia or Other Organism.
- Biological Test:** Macrophytic Identification, Planktonic Identification Count and Chlorophyll.

‘परिवेश भवन’ पर्वी अर्जुन नगर, दिल्ली-110032

Contd.

Parivesh Bhawan, East Arjun Nagar, Delhi-110032

दूरभाष/Tel : 43102030, 22305792, वेबसाइट/Website : www.cpcb.nic.in

- viii. **Characterization of Hazardous Waste:** Corrosivity, Ignibility (Flash point) and Measurement of Heavy Metals/Pesticides in the Waste/Leachate.
- ix. **Soil/Sludge/Sediment and Solid Waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen (Available), Organic Carbon/Matter (Chemical Method), pH, Phosphorous (Available), Phosphate (Ortho), Phosphate (Total), Potassium, SAR in Soil Extract, Sodium, Soil moisture, TKN, Calorific Value, Ammonia, Bicarbonate, Calcium, Calcium Carbonate, Chloride, Colour, H.Acid, Heavy Metal, Magnesium, Nitrate, Nitrite, PAH, Pesticide, Potash (Available), Sulphate, Sulphur, Total Organic Carbon, Total Water Soluble Salt and Water Holding Capacity.
- x. **Ambient Air/ Fugitive Emissions:** Nitrogen Dioxide (NO₂), Sulphur Dioxide (SO₂), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM₁₀, Ammonia, Carbon Monoxide, Chlorine, Lead, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-Pyrene & others and PM_{2.5}.
- xi. **Stack Gases/ Source Emission:** Particulate Matter, Sulphur Dioxide, Velocity & Flow, Carbon Dioxide, Carbon Monoxide, Temperature, Oxygen, Oxides of Nitrogen, Acid Mist, Ammonia, Total Hydrocarbon, Hydrogen Sulphide and Carbon Disulphide.
- xii. **Noise Level:** Noise Level Measurement (20-140 dBA) and Ambient Noise and Source Specific Noise.
- xiii. **Meteorological:** Ambient Temperature, Wind Direction, Wind Speed, Relative Humidity, Solar Radiation and Rainfall.

3. Further, the following analysts have been approved as Government Analysts.

- i. M. Sachin Raju
- ii. Binu Mani
- iii. Arshiya Kousar

- 4. The laboratory shall compulsorily participate in the Analytical Quality Exercise conducted by the Central Pollution Control Board (CPCB) to ascertain the capability of the laboratory and analysis carried out and shall submit quarterly progress report to CPCB.
- 5. The surprise inspection/periodic surveillance of the recognized environment laboratory will be undertaken by CPCB to assess its proper functioning systematic operation and reliability of data generated at the laboratory.
- 6. It is also mandatory for the laboratory to have requisite accreditations of the ISO: 17025 and ISO:45001 and its renewal as per accreditation rules. This recognition is subject to such accreditations and renewals as applicable. The laboratory is required to apply online for further renewal of recognition through CPCB web portal after renewal of the mandatory accreditations / certifications concerned.
- 7. The laboratory should compulsorily follow the accepted terms and conditions. In case of serious non-compliance of any of the terms and conditions, the laboratory may be black listed for a minimum period of two years and civil/criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,

डॉ. के. रंगनाथन / Dr. K. Ranganathan
 वैज्ञानिक 'ई' सरकारी विश्लेषक / Scientist 'E' Govt. Analyst
 केंद्रीय प्रदूषण नियंत्रण बोर्ड
 Central Pollution Control Board
 पर्यावरण, वन एवं जलवायु परिवर्तन विभाग, भारत सरकार
 (Mo Environment, Forest & Climate Change, Govt. of India)
 परियोजना भवन, पूर्वी अर्जुन नगर, दिल्ली-110032
 Parivesh Bhawan, East Arjun Nagar, Delhi-110032

K. Ranganathan 7/6/23
 (Dr. K. Ranganathan)
 Scientist-E & Divisional Head
 Instrumentation laboratory

ENVIRONMENTAL MONITORING REPORT

August, 2024

Project : Ramgad Manganese Ore Mine
ML No. 2679
Ramgad Village, Sandur Taluk,
Ballari Dist., Karnataka.

Lessee

The Sandur Manganese & Iron Ores Limited

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,

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ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

Accredited by NABL (TC-6172) Recognised by BIS, FSSAI & CPCB:MoEFCC under E(P) A 1986 Vide
Gazette Notification No. legal 42(3)/2022 dated 22.07.2022 Recognition valid upto 23.05.2023

ISO 45001:2018 Certified Laboratory



TC-6172

TEST REPORT

Table No.1

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A1, Core Zone (ML Area)
Duration : 24 Hrs
Issue date : 02.09.2024
Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0026	10	12	53	27	0.33
03.08.2024	N/24/08/02-0042	7	9	55	33	0.20
09.08.2024	N/24/08/3-0110	9	11	49	36	0.24
10.08.2024	N/24/08/3-0196	11	12	35	18	0.31
16.08.2024	N/24/08/4-0139	6	9	49	22	0.22
17.08.2024	N/24/08/4-0203	9	12	30	18	0.21
19.08.2024	N/24/08/4-0274	8	11	48	25	0.26
20.08.2024	N/24/08/4-0309	5	9	51	28	0.28
28.08.2024	N/24/08/5-0223	8	9	36	20	0.31
29.08.2024	N/24/08/5-0224	7	10	54	30	0.38
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiyakousar
ARSHIYAKOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
Phone : 080-25432969 E-mail : mesbng@gmail.com, www.envtest.in



ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

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ISO 45001:2018 Certified Laboratory



TC-6172

TEST REPORT

Table No.2

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A2, Core Zone (Myadara Banda Block)
Duration : 24 Hrs
Issue date : 02.09.2024
Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
01.08.2024	N/24/08/02-0011	8	11	35	18	0.21
02.08.2024	N/24/08/02-0027	7	11	46	24	0.28
09.08.2024	N/24/08/3-0111	8	10	50	28	0.41
10.08.2024	N/24/08/3-0197	<4	<9	37	19	0.36
12.08.2024	N/24/08/4-0015	8	11	44	23	0.22
13.08.2024	N/24/08/4-0068	7	9	51	28	0.24
23.08.2024	N/24/08/4-0407	11	12	40	21	0.31
24.08.2024	N/24/08/5-0030	8	10	33	18	0.20
26.08.2024	N/24/08/5-0090	11	13	41	25	<0.2
27.08.2027	N/24/08/5-0194	12	14	47	26	0.22
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2- 8 Hr

Arshiya Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
Phone : 080-25432969 E-mail : mesbng@gmail.com, www.envtest.in



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TC-6172

TEST REPORT

Table No.3

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A3, Core Zone (Governor Point)
Duration : 24 Hrs
Issue date : 02.09.2024
Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0028	7	9	51	28	0.31
03.08.2024	N/24/08/02-0043	11	12	58	30	0.22
09.08.2024	N/24/08/3-0112	7	9	41	22	0.28
10.08.2024	N/24/08/3-0198	10	12	44	23	0.42
16.08.2024	N/24/08/4-0140	6	9	37	21	0.33
17.08.2024	N/24/08/4-0204	10	14	48	28	0.31
19.08.2024	N/24/08/4-0275	10	12	53	29	0.20
20.08.2024	N/24/08/4-0310	7	9	30	18	0.24
28.08.2024	N/24/08/5-0225	10	11	47	25	0.28
29.08.2024	N/24/08/5-0226	5	9	36	20	0.24
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2- 8 Hr

Arushi Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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Phone : 080-25432969 E-mail : mesbng@gmail.com, www.envtest.in



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TC-6172

TEST REPORT

Table No.4

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A4, Core Zone (Neerlabi)						
Duration : 24 Hrs						
Issue date : 02.09.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0029	11	12	46	25	0.26
03.08.2024	N/24/08/02-0044	9	10	56	31	0.33
09.08.2024	N/24/08/3-0113	13	14	38	17	0.22
10.08.2024	N/24/08/3-0199	11	12	48	27	0.31
16.08.2024	N/24/08/4-0141	7	9	35	19	0.24
17.08.2024	N/24/08/4-0205	7	11	43	22	0.36
19.08.2024	N/24/08/4-0276	5	9	46	27	0.24
20.08.2024	N/24/08/4-0311	6	9	53	31	0.2
28.08.2024	N/24/08/5-0227	10	11	40	24	0.24
29.08.2024	N/24/08/5-0228	12	13	33	18	0.26
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2, 8 Hr

Arshiya Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.

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ISO 45001:2018 Certified Laboratory



TEST REPORT

Table No.5

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A5, Ramghad village
Duration : 24 Hrs
Issue date : 02.09.2024
Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0030	7	9	48	26	0.33
03.08.2024	N/24/08/02-0045	4	9	54	27	0.27
09.08.2024	N/24/08/3-0114	11	12	45	25	0.21
10.08.2024	N/24/08/3-0200	12	16	40	24	0.23
16.08.2024	N/24/08/4-0142	10	12	38	22	0.25
17.08.2024	N/24/08/4-0206	9	10	33	18	0.27
19.08.2024	N/24/08/4-0277	7	9	51	29	0.36
20.08.2024	N/24/08/4-0312	9	10	39	22	0.22
28.08.2024	N/24/08/5-0229	10	12	36	19	0.45
29.08.2024	N/24/08/5-0230	11	13	45	23	0.38
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2* 8 Hr

Arshiyakousar
ARSHIYAKOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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TC-6172

TEST REPORT

Table No.6

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A6, Dharmapura village						
Duration : 24 Hrs						
Issue date : 02.09.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0031	9	11	40	18	0.41
03.08.2024	N/24/08/02-0046	10	13	56	32	0.22
09.08.2024	N/24/08/3-0115	6	9	47	25	0.24
10.08.2024	N/24/08/3-0201	8	10	40	22	0.36
16.08.2024	N/24/08/4-0143	7	16	50	27	0.25
17.08.2024	N/24/08/4-0207	11	12	38	20	0.41
19.08.2024	N/24/08/4-0278	4	9	43	23	0.20
20.08.2024	N/24/08/4-0313	9	11	37	19	0.36
28.08.2024	N/24/08/5-0231	12	13	48	25	0.41
29.08.2024	N/24/08/5-0232	11	12	53	27	0.28
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiya Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.

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ISO 45001:2018 Certified Laboratory



TEST REPORT

Table No.7

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
 Station at & Code : A7, Garaga village
 Duration : 24 Hrs
 Issue date : 02.09.2024
 Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0032	7	9	36	17	0.25
03.08.2024	N/24/08/02-0047	9	11	23	15	0.32
09.08.2024	N/24/08/3-0116	<4	9	35	18	0.41
10.08.2024	N/24/08/3-0202	5	<9	43	21	0.26
16.08.2024	N/24/08/4-0144	9	11	39	20	<.2
17.08.2024	N/24/08/4-0208	10	12	51	27	0.25
19.08.2024	N/24/08/4-0279	6	9	47	23	0.31
20.08.2024	N/24/08/4-0314	7	10	40	22	0.22
28.08.2024	N/24/08/5-0233	8	11	37	19	<0.2
29.08.2024	N/24/08/5-0234	9	12	51	26	0.23
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.8

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A8, Yeswanthanagar						
Duration : 24 Hrs						
Issue date : 02.09.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
01.08.2024	N/24/08/02-0009	6	12	45	34	0.31
02.08.2024	N/24/08/02-0024	12	14	53	28	0.42
09.08.2024	N/24/08/3-0103	9	12	51	29	0.35
10.08.2024	N/24/08/3-0185	7	9	45	22	0.22
12.08.2024	N/24/08/4-0013	10	12	51	28	0.31
13.08.2024	N/24/08/4-0066	12	14	56	32	0.29
23.08.2024	N/24/08/4-0400	9	11	42	22	0.24
24.08.2024	N/24/08/5-0023	8	9	53	28	0.21
26.08.2024	N/24/08/5-0088	10	13	35	16	0.33
27.08.2027	N/24/08/5-0192	7	9	48	25	0.42
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.9

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A9, Subbarayanahalli						
Duration : 24 Hrs						
Issue date : 02.09.2024						
Reference IS 5182 & Lab SOP						
Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
01.08.2024	N/24/08/02-0005	11	13	50	27	0.22
02.08.2024	N/24/08/02-0020	13	14	56	32	0.24
09.08.2024	N/24/08/3-0099	10	16	38	19	0.36
10.08.2024	N/24/08/3-0181	11	14	38	18	0.28
12.08.2024	N/24/08/4-0009	11	13	55	29	0.21
13.08.2024	N/24/08/4-0062	10	14	46	24	0.36
23.08.2024	N/24/08/4-0396	10	14	50	27	0.43
24.08.2024	N/24/08/5-0019	7	9	42	22	0.45
26.08.2024	N/24/08/5-0084	15	17	27	19	0.25
27.08.2027	N/24/08/5-0188	9	10	56	27	0.41
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No.10

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A10, Siddapura village
Duration : 24 Hrs
Issue date : 02.09.2024
Reference IS 5182 & Lab SOP

Date of Sampling	Lab Code	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	Particulate Matter		Carbon Monoxide* (CO), mg/m ³
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	
02.08.2024	N/24/08/02-0033	7	8	44	24	0.42
03.08.2024	N/24/08/02-0048	9	11	56	27	0.20
09.08.2024	N/24/08/3-0117	12	12	48	20	0.26
10.08.2024	N/24/08/3-0203	11	9	49	28	0.21
16.08.2024	N/24/08/4-0145	8	9	38	18	0.28
17.08.2024	N/24/08/4-0209	12	14	53	28	0.33
19.08.2024	N/24/08/4-0280	8	12	44	26	0.31
20.08.2024	N/24/08/4-0315	9	11	49	29	0.22
28.08.2024	N/24/08/5-0235	8	9	38	20	0.28
29.08.2024	N/24/08/5-0236	11	18	44	24	0.23
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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TEST REPORT

Table No. 11

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited			
Name of the Project : Mining Lease No. 2679			
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)			
Duration : 08 Hrs			
Issue Date : 02.09.2024			
Station at & Code	Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Loading point	17.08.2024	N/24/08/4-0210	177
FA2, Dumping point	17.08.2024	N/24/08/4-0211	354
FA3, Haulage Road	17.08.2024	N/24/08/4-0212	268
FA4, Stack Yard	17.08.2024	N/24/08/4-0213	232
FA5, Drilling Point	17.08.2024	N/24/08/4-0214	356
FA6, Waste Dumping Point	17.08.2024	N/24/08/4-0215	366
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)			
Particulate mater ($\mu\text{g}/\text{m}^3$)			
Permissible limits for Fugitive Emissions 600 $\mu\text{g}/\text{m}^3$			

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TEST REPORT

Table No. 12

Analysis Report of Dust Fall Measurement

1	Name of the Client	The Sandur Manganese & Iron Ores Limited
2	Name of the Project	Mining Lease No. 2679
3	Month	01.08.2024 to 31.08.2024
4	Sample Type	Total Dust Fall Rate
5	Duration of Monitoring	One Month
6	Issue Date	02.09.2024

Result

Code	Location	Result	unit	Reference Method
DF1	Mine Office Area	0.006	g/m ² month	IS 5182 (Part 01) : 2006
DF2	Near Crusher Area	0.009	g/m ² month	IS 5182 (Part 01) : 2006

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Table No. 13

TEST REPORT AMBIENT NOISE LEVEL DATA

Report No : ELMES0112408

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2679					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Date of monitoring		: 17.08.2024					
Issue Date		: 02.09.2024					
Code No.	Monitoring stations	Day			Night		
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Corezone							
N1	Core zone ML Area	36.0	46.4	52.0	34.0	41.6	44.0
N2	Myadara Banda Block	42.0	50.3	56.3	35.0	41.8	45.8
N3	Goerner Point	37.0	51.6	56.3	32.0	38.7	42.0
N4	Neerlabbi	40.0	50.4	58.0	34.0	40.7	46.8
Buffer zone							
N5	Ramgad village	36.0	47.3	53.0	34.0	41.2	44.8
N6	Dharmapura	41.0	47.2	51.0	35.0	40.7	43.6
N7	Garaga village	36.0	45.4	50.0	33.0	37.1	40.0
N8	Yeshwanthanagar	42.0	51.0	58.0	34.0	40.5	46.0
N9	Subbarayanahalli	39.6	50.3	55.7	33.3	40.5	43.0
N10	Siddapura	41.0	50.8	57.3	34.6	43.4	47.0
<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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Table No. 14

TEST REPORT

Report No : ELMES0122408

Name of the Client		: M/s. Sandur Manganese & Iron Ores Limited																			
Name of the Project		: Mining Lease No. 2679																			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)																			
Date of monitoring		: 16.08.2024																			
Issue Date		: 02.09.2024																			
Code No.	Monitoring stations	Day			Remarks																
		L _{min}	L _{eq}	L _{max}																	
Source																					
N1	Loading Point	36.0	54.2	60.0	During operation																
N2	Dumping Point	41.0	65.3	73.0	During operation																
N3	Haulage Road	44.0	60.8	68.0	During operation																
Heavy Earth Moving Machineries																					
N4	Wheel Loader	45.0	77.7	82.0	During operation in side of the cabin																
		42.0	73.7	76.5	During operation 10mts outside of the cabin																
N5	Tata Hitachi 200LC	42.0	71.9	76.0	During operation in side of the cabin																
		39.0	69.6	74.0	During operation 10mts outside of the cabin																
<table border="0"> <tr> <td>Permissible limits as per ILO Code of Practice</td> <td>Permissible Limits of Ambient</td> </tr> <tr> <td>For Unprotected ear - 8 hrs working shift</td> <td>Noise Levels as per CPCB Guidelines</td> </tr> <tr> <td>Warning limit - 85 dB(A)</td> <td>Leq. Limit dB(A)</td> </tr> <tr> <td>Danger limit - 90 dB(A)</td> <td>Day Night</td> </tr> <tr> <td>Worker not to be exposed for more than 115 dB(A)</td> <td>Industrial areas 75 70</td> </tr> <tr> <td>With ear protection -</td> <td>Commercial area 65 55</td> </tr> <tr> <td>130 dB(A) 'Impulse' or 120 dB(A) 'Fast'</td> <td>Residential area 55 45</td> </tr> <tr> <td>No entry when noise level exceeds 140 dB(A)</td> <td></td> </tr> </table>						Permissible limits as per ILO Code of Practice	Permissible Limits of Ambient	For Unprotected ear - 8 hrs working shift	Noise Levels as per CPCB Guidelines	Warning limit - 85 dB(A)	Leq. Limit dB(A)	Danger limit - 90 dB(A)	Day Night	Worker not to be exposed for more than 115 dB(A)	Industrial areas 75 70	With ear protection -	Commercial area 65 55	130 dB(A) 'Impulse' or 120 dB(A) 'Fast'	Residential area 55 45	No entry when noise level exceeds 140 dB(A)	
Permissible limits as per ILO Code of Practice	Permissible Limits of Ambient																				
For Unprotected ear - 8 hrs working shift	Noise Levels as per CPCB Guidelines																				
Warning limit - 85 dB(A)	Leq. Limit dB(A)																				
Danger limit - 90 dB(A)	Day Night																				
Worker not to be exposed for more than 115 dB(A)	Industrial areas 75 70																				
With ear protection -	Commercial area 65 55																				
130 dB(A) 'Impulse' or 120 dB(A) 'Fast'	Residential area 55 45																				
No entry when noise level exceeds 140 dB(A)																					

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TEST REPORT



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Table No.15

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected : SW1 - Ragavapura kere water, SW2 - Dhananayakana kere water
: SW3 - Narihalla Upstream water, SW4 - Narihalla Downstream water
Date of sample collection : 16.08.2024
Issue Date : 22.08.2024

Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)

Sl.No.	Sample Code	SW1	SW2	SW3	SW4	Limits For Stream Water Standards	Method of Testing
	Lab Code	N/24/08/4-0189	N/24/08/4-0190	N/24/08/4-0191	N/24/08/4-0192		
	Parameters	Results					
1	pH	7.87	8.45	7.67	7.65	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	5	10	20	20	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	140	350	135	140	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	160	120	240	260	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.6	5.1	5.50	5.40	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3.0	<3.0	<3.0	<3.0	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<0.1	<0.1	<0.1	<0.1	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	52	120	56	54	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	24.6	60	21	12.5	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	26	120	24.0	25	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.37	0.67	0.41	0.45	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<0.01	<0.01	<0.01	<0.01	-	IS:3025 (P-29):1986 RA 2019
15	Boron (as B), mg/l, Max	<0.1	<0.1	<0.1	<0.1	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	<0.005	<0.005	<0.005	<0.005	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	36	26	22.00	20.00	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.05	<0.05	<0.05	<0.05	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	260	330	250	260	5000	IS:1622:1981

""END OF REPORT""

BINU MANI

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Technical Manager

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TEST REPORT

Stack Monitoring Report

Table No. 16

Report No. N/020124084

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)
Location :	Mining Lease No. 2679
Stack ID & Capacity :	DG Set 35 KVA Ramgad-KK1 Mines
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	17.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	19.08.2024
Lab Code :	N/24/08/4-0201
Issue date :	01.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	112
4	Velocity (m/s)	5.87
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	271.8
7	Sample Condition When Received	Satisfactory
8	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
9	Serial No. of the Equipment	338 DTH 14
10	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
11	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.034	<0.2
2	CO	g/Kw-hr	0.113	<3.5
3	Nox +HC	g/Kw-hr	0.135	<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. N/020224084

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)
Location :	Mining Lease No. 2679
Stack ID & Capacity :	DG Set 20 KVA Ramgad Mines
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	17.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	19.08.2024
Lab Code :	N/24/08/4-0202
Issue date :	01.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	140
4	Velocity (m/s)	5.07
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	219
7	Sample Condition When Received	Satisfactory
8	Model of the Equipment used for Monitoring	Vayubodhan Stack Sampler VSS1
9	Serial No. of the Equipment	338 DTH 14
10	Calibration done on and due on	Done on 19.11.2022 and Due on 18.11.2024
11	Sampling and Analysis Method	IS 11255 & flue gas analyser

Pollutional Parameters (Result)

Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.046	<0.2
2	CO	g/Kw-hr	0.054	<3.5
3	Nox +HC	g/Kw-hr	0.164	<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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Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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