

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/2024-25/2678/774

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. 2678.

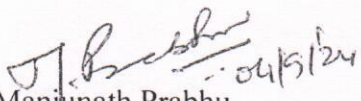
Ref: 1. Environmental Clearance F.No. IA-J-11015/45/2021-IA-II(M) dated 25 April 2023.
2. Consent for Operation No. AW-341719 dated 02 February 2024.

With reference to the letter 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. 2678 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... .. Tel: +91 8395 271025 / 28 / 29 / 40; Fax: +91 8395 271066



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 : Mining Lease No. 2678
Deogiri Manganese & Iron Ore Mine,
Kammathuru Iron Ore Mine,
Subrayanahalli Manganese & Iron Ore Mine,
Sandur Taluk, Ballari Dist, Karnataka.

Lessee

The Sandur Manganese & Iron Ores Limited
Sandur,

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)

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Gazette Notification No. legal 42(3)/2022 dated 22.07.2022 Recognition valid upto 23.05.2023

ISO 45001:2018 Certified Laboratory



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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A1, Mine Pit (SK) / (CBG)
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/24/08/02-0001	10	11	46	25	0.21
02.08.2024	N/24/08/02-0016	8	13	43	23	0.33
09.08.2024	N/24/08/3-0095	11	10	50	30	0.37
10.08.2024	N/24/08/3-0177	10	15	49	26	0.48
12.08.2024	N/24/08/4-0005	9	13	53	27	0.42
13.08.2024	N/24/08/4-0058	11	10	56	33	0.35
23.08.2024	N/24/08/4-0392	8	12	47	28	0.33
24.08.2024	N/24/08/5-0015	12	14	35	17	0.27
26.08.2024	N/24/08/5-0080	10	11	43	26	0.25
27.08.2027	N/24/08/5-0184	11	10	38	25	0.32
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.2

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A2, Kammathuru (within 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)	
01.08.2024	N/24/08/02-0002	9	13	30	23	0.42
02.08.2024	N/24/08/02-0017	10	15	45	28	0.25
09.08.2024	N/24/08/3-0096	8	11	46	32	0.31
10.08.2024	N/24/08/3-0178	12	10	40	22	0.26
12.08.2024	N/24/08/4-0006	11	12	46	24	0.21
13.08.2024	N/24/08/4-0059	9	14	53	27	0.28
23.08.2024	N/24/08/4-0393	10	10	36	20	0.33
24.08.2024	N/24/08/5-0016	8	11	30	24	0.25
26.08.2024	N/24/08/5-0081	11	10	54	28	0.46
27.08.2027	N/24/08/5-0185	10	12	51	26	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

Arshiy Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

Govt. Analyst /Authorised Signatory

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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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A3, Deogiri (within 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)	
01.08.2024	N/24/08/02-0003	11	15	41	24	0.31
02.08.2024	N/24/08/02-0018	9	13	35	23	0.28
09.08.2024	N/24/08/3-0097	10	11	38	25	0.24
10.08.2024	N/24/08/3-0179	11	10	55	30	0.26
12.08.2024	N/24/08/4-0007	12	11	40	25	0.20
13.08.2024	N/24/08/4-0060	8	12	40	18	0.28
23.08.2024	N/24/08/4-0394	10	14	44	25	0.30
24.08.2024	N/24/08/5-0017	11	15	52	24	0.25
26.08.2024	N/24/08/5-0082	6	10	48	35	0.44
27.08.2027	N/24/08/5-0186	11	13	57	32	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
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Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

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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. 2678 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services) Station at & Code : A4, SBH Plot (Mine Boundary) 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/24/08/02-0004	9	14	43	25	0.24
02.08.2024	N/24/08/02-0019	7	8	38	22	0.25
09.08.2024	N/24/08/3-0098	9	10	49	26	0.31
10.08.2024	N/24/08/3-0180	11	16	47	24	0.36
12.08.2024	N/24/08/4-0008	12	13	44	24	0.28
13.08.2024	N/24/08/4-0061	10	9	38	22	0.33
23.08.2024	N/24/08/4-0395	7	12	55	32	0.38
24.08.2024	N/24/08/5-0018	10	11	49	27	0.45
26.08.2024	N/24/08/5-0083	10	12	38	18	0.28
27.08.2027	N/24/08/5-0187	10	12	49	19	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
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TC-6172

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. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code	: A5, Subbarayanahalli (within 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)	
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

Arshiya Kousar
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Dy. T.M. Chemical

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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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A6, Appayyanahalli (Narayanpura)
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/24/08/02-0006	10	12	41	24	0.33
02.08.2024	N/24/08/02-0021	8	11	57	29	0.31
09.08.2024	N/24/08/3-0100	14	16	49	25	0.26
10.08.2024	N/24/08/3-0182	8	11	46	23	0.20
12.08.2024	N/24/08/4-0010	10	14	38	22	0.21
13.08.2024	N/24/08/4-0063	13	16	48	28	<0.2
23.08.2024	N/24/08/4-0397	10	13	45	27	0.21
24.08.2024	N/24/08/5-0020	9	12	51	27	0.39
26.08.2024	N/24/08/5-0085	11	15	29	18	0.35
27.08.2027	N/24/08/5-0189	10	11	35	19	0.31
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

Arshiy Kousar
ARSHIYA KOUSAR
Dy. T.M. Chemical

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

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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. 2678						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)						
Station at & Code : A7, Vitalanagar (Navalatti)						
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/24/08/02-0007	14	16	55	32	0.27
02.08.2024	N/24/08/02-0022	10	11	46	26	0.25
09.08.2024	N/24/08/3-0101	10	15	53	28	0.31
10.08.2024	N/24/08/3-0183	13	14	35	18	0.29
12.08.2024	N/24/08/4-0011	12	14	48	25	0.24
13.08.2024	N/24/08/4-0064	10	12	37	21	0.25
23.08.2024	N/24/08/4-0398	15	16	56	31	0.35
24.08.2024	N/24/08/5-0021	9	12	47	27	0.43
26.08.2024	N/24/08/5-0086	11	12	39	22	0.45
27.08.2027	N/24/08/5-0190	14	15	41	25	0.33
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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A8, Swamihalli
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/24/08/02-0008	6	9	38	15	0.25
02.08.2024	N/24/08/02-0023	9	11	44	29	0.41
09.08.2024	N/24/08/3-0102	8	9	35	17	0.35
10.08.2024	N/24/08/3-0184	12	18	48	28	0.46
12.08.2024	N/24/08/4-0012	10	11	53	29	0.31
13.08.2024	N/24/08/4-0065	9	10	44	24	0.28
23.08.2024	N/24/08/4-0399	7	11	42	22	0.24
24.08.2024	N/24/08/5-0022	10	13	48	27	0.21
26.08.2024	N/24/08/5-0087	13	15	36	19	0.23
27.08.2027	N/24/08/5-0191	11	13	50	32	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

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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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A9, 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.10

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A10, Tonasigeri
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/24/08/02-0010	9	16	43	25	0.20
02.08.2024	N/24/08/02-0025	11	14	40	23	0.26
09.08.2024	N/24/08/3-0104	9	11	28	18	0.24
10.08.2024	N/24/08/3-0186	9	9	37	17	0.33
12.08.2024	N/24/08/4-0014	11	12	45	22	0.42
13.08.2024	N/24/08/4-0067	11	11	54	28	<0.2
23.08.2024	N/24/08/4-0401	8	11	50	24	0.28
24.08.2024	N/24/08/5-0024	9	10	44	26	0.24
26.08.2024	N/24/08/5-0089	10	12	45	22	0.32
27.08.2027	N/24/08/5-0193	11	13	36	21	0.25
Limits for Industrial ,		80	80	100	60	2
Residential, Rural and other Areas		24 Hrs	24 Hrs	24 Hrs	24 Hrs	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 : Deogiri Manganese & Iron Ore Mine (ML NO. 2678)			
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, Mine Face / Benches	24.08.2024	N/24/08/5-0025	185
FA2, Haulage Road / Service Road	24.08.2024	N/24/08/5-0026	245
FA3, Crushing & Screening Plant	24.08.2024	N/24/08/5-0027	325
FA4, Mineral Stock Yard / Loading	24.08.2024	N/24/08/5-0028	196
FA5, Active Waste Dump	24.08.2024	N/24/08/5-0029	325
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

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited			
Name of the Project : Kammathuru Iron Ore (KTIO) (ML No. 2678)			
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, Mine Face / Benches	10.08.2024	N/24/08/3-0187	122
FA2, Haulage Road / Service Road	10.08.2024	N/24/08/3-0188	256
FA3, Crushing & Screening Plant	10.08.2024	N/24/08/3-0189	312
FA4, Mineral Stock Yard / Loading	10.08.2024	N/24/08/3-0190	256
FA5, Active Waste Dump	10.08.2024	N/24/08/3-0191	275
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. 13

Fugitive Emission

Name of the Client	: The Sandur Manganese & Iron Ores Limited		
Name of the Project	: Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)		
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, Mine Face / Benches	23.08.2024	N/24/08/4-0402	211
FA2, Haulage Road / Service Road	23.08.2024	N/24/08/4-0403	321
FA3, Crushing & Screening Plant	23.08.2024	N/24/08/4-0404	366
FA4, Mineral Staoock Yard / Loading	23.08.2024	N/24/08/4-0405	321
FA5, Active Waste Dump	23.08.2024	N/24/08/4-0406	385
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. 14

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. 2678
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	Deogiri mines office	0.015	g/m ² month	IS 5182 (Part 01) : 2006
DF2	Kammathuru (Near School)	0.008	g/m ² month	IS 5182 (Part 01) : 2006
DF3	Appayyanahalli	0.007	g/m ² month	IS 5182 (Part 01) : 2006
DF4	Subbarayanahalli (Near Hospital)	0.011	g/m ² month	IS 5182 (Part 01) : 2006
DF5	Yeswanthanagar (Near Railway Track)	0.012	g/m ² month	IS 5182 (Part 01) : 2006

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TEST REPORT

Table No. 15

AMBIENT NOISE LEVEL DATA

Report No : ELMES0102408

Client	: The Sandur Manganese & Iron Ores Limited
Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Date of monitoring	: 09.08.2024
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	Mine Pit (SK/CBG)	39.0	46.9	53.2	34.0	41.0	43.6
N2	Kammathuru ML Area	38.0	50.8	56.3	35.3	42.8	47.3
N3	Deogiri ML Area	40.0	48.0	54.0	34.0	41.9	44.8
N4	SBS Plot (Mine Boundary)	42.0	51.4	58.0	33.8	42.0	47.0
N5	SB Halli ML Area	36.0	49.9	56.0	33.9	41.8	45.8
N6	Mine area	39.0	53.3	57.3	34.0	41.0	44.0
Bufferzone							
N7	Appayanahalli (Narayanapura)	41.0	49.9	56.0	34.0	39.6	45.3
N8	Vitthalanagar (Navalatti)	34.5	50.2	55.3	34.5	43.4	48.0
N9	Swamihalli	36.0	43.6	49.0	33.6	41.0	43.0
N10	Yeshwanthnagar	37.0	49.0	55.8	34.0	40.4	45.0
N11	Tonasingeri	37.0	50.0	54.2	33.6	41.9	46.3
N12	Kumaraswamy Temple	36.3	47.1	54.0	34.6	38.7	42.0

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

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TEST REPORT

Table No. 16

Report No : N0093240802

Name of the Client	: The Sandur Manganese & Iron Ores Limited
Name of the Project	: Mining Lease No. 2678
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)
Particulars of sample collected	: STP1, Inlet Water sample from 100 KLD STP, Deogiri
Date of sample collection	: 09.08.2024
Lab Code	: N/24/08/02-0093
Issue Date	: 19.08.2024
Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)	

Sl. No.	Sample Code	STP1	Method of Testing
	Parameters	Results	
1	pH	6.66	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD ₃ 27 ⁰ C, mg/l	50	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105 ⁰ C, mg/l	200	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	4	APHA-23 rd Edition

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TEST REPORT

Table No. 17

Report No : N0094240802

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2678
Sample Collected by : Environmental Laboratory
(Unit of Mineral Engineering Services)
Particulars of sample collected : STP2, Outlet Water sample from 100 KLD STP, Deogiri
Date of sample collection : 09.08.2024
Lab Code : N/24/08/02-0094
Issue Date : 19.08.2024
Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Sample Code	STP2	Sewage Effluent Discharge Standards	Method of Testing
	Parameters	Results		
1	pH	6.94	5.5 to 9.0	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD ₅ 27 ⁰ C, mg/l	8.25	<30	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105 ⁰ C, mg/l	64	<50	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	2	<1000	APHA-23 rd Edition

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TEST REPORT

Table No. 18

Name of the Client		: The Sandur Manganese & Iron Ores Limited				
Name of the Project		: Mining Lease No. 2678				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)				
Particulars of sample collected		: SW1 - Durgammakolla spring water, SW2 - JLK spring water SW3 - Katrasinghkolla spring water				
Date of sample collection		: 09.08.2024				
Date of sample receipt		: 10.08.2024				
Issue Date		: 19.08.2024				
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)						
Lab Code		N/24/08/02-0083	N/24/08/02-0084	N/24/08/02-0085	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results				
		SW1	SW2	SW3		
1	pH	7.70	6.55	7.45	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	1	1	5	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	290	160	120	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	28	16	44	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.3	5.5	5.6	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3.0	<3.0	<3.0	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<1.0	<1.0	<1.0	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	210	60	46	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	40.2	11.5	8.4	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	35	46	48	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.4	0.25	0.21	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<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	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	0.016	0.032	0.07	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	14	40	30	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	1.6	<0.5	<0.5	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	40	28	24	5000	IS:1622:1981

""END OF REPORT""


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TEST REPORT

Table No.19

Name of the Client		: The Sandur Manganese & Iron Ores Limited			
Name of the Project		: Mining Lease No. 2678			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)			
Particulars of sample collected		: SW4 - Hari Shankar Spring Water, SW5 - Narihalla Dam water			
Date of sample collection		: 09.08.2024			
Date of sample receipt		: 10.08.2024			
Issue Date		: 19.08.2024			
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)					
Lab Code		N/24/08/02-0086	N/24/08/02-0087	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results			
		SW4	SW5		
1	pH	6.54	8.37	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	3.0	5.00	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	54.0	440.0	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	18.5	62	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l, Max	5.50	5.30	Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3	<3	3	IS:3025(P-44) 2014
8	Oil & Grease, mg/l	<0.1	<0.1	0.1	IS:3025(Part 39)2021
9	Total Hardness (as CaCO ₃),mg/l,Max	20	205	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	4.4	70	400	IS:3025(P-24)Sec 1 2022
11	Phosphates (as P), mg/l	<0.05	<0.05	-	IS 3025 (P-31) Sec 1 2022
12	Chloride (as Cl),mg/l, Max	22	130	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.4	0.6	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H ₂ S) , mg/l, Max	<0.01	<0.01	-	IS:3025 (P-29):1986 RA 2019
15	Boron (as B), mg/l, Max	<0.1	<0.1	-	IS:3025 (Part-57)2021
16	Iron (as Fe),mg/l, Max	0.081	0.021	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	22.00	20.11	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.05	<0.05	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	22	60	5000	IS:1622:1981

"END OF REPORT"

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TEST REPORT

Table No. 20

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2678					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Particulars of sample collected		: GW1 - Deogiri Mine Office Bore water, GW2 - Kammaturu Bore water, GW3 - Appayyanahalli (Narayanpura) Bore water					
Date of sample collection		: 09.08.2024					
Issue Date		: 19.08.2024					
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)							
Sl. No.	Lab Code	N/24/08/02-0088	N/24/08/02-0089	N/24/08/02-0090	Desirable Limits	Permissible Limits	Method of Testing
	Sample Code	GW1	GW2	GW3			
	Parameters	Results					
1	Colour (Hazen Units)	<1	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.02	6.54	7.80	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity, NTU, Max	1.2	0.7	<0.1	1	5	IS:3025 (P-10) 1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	150.0	370.0	1670.0	—	—	IS 3025 (P-14)
6	Total Dissolved Solids, mg/l, Max	80.0	200.0	950.0	500	2000	IS:3025 (P-16) 1984 RA 2017
7	Aluminium (as Al), Max	<0.005	<0.005	<0.005	0.03	0.2	IS:3025 (P-2) 2019
8	Boron (as B), mg/l, Max	<0.1	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57) 2021
9	Calcium (as Ca), mg/l, Max	5.61	20.80	108.20	75	200	IS:3025 (P-40) 1991 RA 2019
10	Copper (as Cu), mg/l, Max	<0.005	<0.005	<0.005	0.05	1.5	IS:3025 (P-2) 2019
11	Chloride as Cl (mg/l), mg/l, Max	20.00	38.00	210.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F), mg/l, Max	<0.1	0.62	0.72	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe), mg/l, Max	0.006	0.011	0.061	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg), mg/l, Max	2.91	17.50	75.30	30	100	IS:3025 (P-46) 1994 RA 2019
15	Manganese (as Mn), mg/l, Max	<0.001	0.004	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO ₃), mg/l, Max	2.40	4.80	20.50	45	45	IS:3025 (P-34) Sec 1 2023
17	Selenium (as Se), mg/l	<0.005	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
18	Sulphates (as SO ₄), mg/l, Max	12.00	24.50	140.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃), mg/l, Max	36.00	106.0	460.0	200	600	IS:3025 (P-23): 1986 RA 2019
20	Total Hardness (as CaCO ₃), mg/l, Max	26.0	124.0	580.0	200	600	IS:3025 (P-21): 2009 RA 2019
21	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	12	76	80	-	-	IS:3025 (Part-45) 1993 RA 2019
23	Potassium, (as K), mg/l, Max	2	8	5	-	-	IS:3025 (Part-45)
24	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	<0.001	0.003	0.003	IS:3025 (P-2) 2019
25	Cyanide (as CN), mg/l, Max	<0.01	<0.01	<0.01	0.05	0.05	IS:3025 (P-27) Sec 1 2021
26	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
27	Mercury (as Hg), mg/l, Max	<0.0005	<0.0005	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
28	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	0.01	0.01	IS:3025 (P-2) 2019
29	Total Chromium (as Cr), mg/l, Max	<0.001	<0.001	<0.001	0.05	0.05	IS:3025 (P-52) 2014
30	Escherichia coli/100ml	Not Detected	Not Detected	Not Detected	Shall not be detectable in any 100ml Sample		IS:15185:2016 RA 2021
31	Total Coliform /100ml	Not Detected	Not Detected	Not Detected			IS:15185:2016 RA 2021

"END OF REPORT"


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Technical Manager

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TEST REPORT

Table No. 21

Name of the Client		: The Sandur Manganese & Iron Ores Limited				
Name of the Project		: Mining Lease No. 2678				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)				
Particulars of sample collected		: GW4 - SB Halli Bore water (near hospital), GW5 - Yeshwanthnagar Bore water (near railway track)				
Date of sample collection		: 09.08.2024				
Issue Date		: 19.08.2024				
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)						
Sl. No.	Lab Code	N/24/08/02-0091	N/24/08/02-0092	Desirable Limits	Permissible Limits	Method of Testing
	Sample Code Parameters	GW4	GW5			
1	Colour (Hazen Units)	<1	<1	5	15	IS:3025 (P-4) 2021
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	IS:3025 (P-5) 2018
3	pH Value	7.87	7.33	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity, NTU, Max	1.2	<0.1	1	5	IS:3025 (P-10) 1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	2000.0	2400.0	—	—	IS 3025 (P-14)
6	Total Dissolved Solids, mg/l, Max	1140.0	1390.0	500	2000	IS:3025 (P-16) 1984 RA 2017
7	Aluminium (as Al), Max	<0.005	<0.005	0.03	0.2	IS:3025 (P-2) 2019
8	Boron (as B), mg/l, Max	<0.1	<0.1	0.5	2.4	IS:3025 (Part-57) 2021
9	Calcium (as Ca), mg/l, Max	148.20	120.20	75	200	IS:3025 (P-40) 1991 RA 2019
10	Copper (as Cu), mg/l, Max	<0.005	<0.005	0.05	1.5	IS:3025 (P-2) 2019
11	Chloride as Cl (mg/l), mg/l, Max	270.00	360.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F), mg/l, Max	0.38	0.95	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe), mg/l, Max	0.072	0.058	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg) mg/l, Max	51.00	70.40	30	100	IS:3025 (P-46) 1994 RA 2019
15	Manganese (as Mn), mg/l, Max	<0.001	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO ₃), mg/l, Max	14.00	21.50	45	45	IS:3025 (P-34) Sec 1 2023
17	Selenium (as Se), mg/l	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
18	Sulphates (as SO ₄), mg/l, Max	130.00	210.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃) mg/l, Max	570.0	440.0	200	600	IS:3025 (P-23) 1986 RA 2019
20	Total Hardness (as CaCO ₃), mg/l, Max	580.0	590.0	200	600	IS:3025 (P-21) 2009 RA 2019
21	Zinc (as Zn), mg/l, Max	<0.005	<0.005	5	15	IS:3025 (P-2) 2019
22	Sodium, (as Na), mg/l, Max	170	97	—	—	IS:3025 (Part-45) 1993 RA 2019
23	Potassium, (as K), mg/l, Max	3	<1.0	—	—	IS:3025 (Part-45)
24	Cadmium (as Cd), mg/l, Max	<0.001	<0.001	0.003	0.003	IS:3025 (P-2) 2019
25	Cyanide (as CN), mg/l, Max	<0.01	<0.01	0.05	0.05	IS:3025 (P-27) Sec 1 2021
26	Lead (as Pb), mg/l, Max	<0.005	<0.005	0.01	0.01	IS:3025 (P-2) 2019
27	Mercury (as Hg), mg/l, Max	<0.0005	<0.0005	0.001	0.001	USPEA 200.7 Rev 4.4
28	Arsenic (as As), mg/l, Max	<0.002	<0.002	0.01	0.01	IS:3025 (P-2) 2019
29	Total Chromium (as Cr), mg/l, Max	<0.001	<0.001	0.05	0.05	IS:3025 (P-52) 2014
30	Escherichia coli/100ml	Not Detected	Not Detected	Shall not be detectable in any 100ml Sample		IS:15185:2016 RA 2021
31	Total Coliform /100ml	Not Detected	Not Detected			IS:15185:2016 RA 2021

"END OF REPORT"

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TEST REPORT

Table No. 22

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2678					
Particulars of sample		: Soil Samples					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Date of sample collection		: 09.08.2024					
Issue Date		: 02.09.2024					
Lab Code			N/24/08/02-0097	N/24/08/02-0098	N/24/08/02-0099	N/24/08/02-0100	N/24/08/02-0101
SL. No.	Sample Code		S1	S2	S3	S4	S5
	PARAMETERS	Unit	Results				
PHYSICAL PROPERTIES							
1	Colour	--	Red Soil	Red Soil	Red Soil	Red Soil	Red Soil
2	Textural class	--	Clay Loam	Sandy Loam	Clay Loam	Clay Loam	Clay Loam
3	Size Distribution						
	Sand	%	30.25	35.42	32.85	32.00	36.03
	Clay	%	43.53	34.59	28.33	40.37	37.97
	Silt	%	26.22	29.99	38.66	27.63	26.00
4	Moisture Content	%	7.23	6.74	6.93	5.96	7.08
5	Bulk Density	gm/cc	1.53	1.82	1.5	1.89	141
6	Water holding capacity	%	32.21	28.63	20	26.22	23.85
7	pH	--	6.83	6.63	7.18	7.23	6.21
8	EC	m.mohs/cm	0.194	0.278	0.198	0.245	0.166
Chemical Properties							
9	Organic Carbon	%	0.63	0.33	0.19	1.88	2.48
10	Nitrogen as N	Kg/Ha	132	2.46	120	126	185
11	Phosphorous as P	Kg/Ha	6.42	8.99	7.19	7.53	7.26
12	Potassium as K ₂ O	Kg/Ha	1.88	135	120	126	130
13	Sodium as Na	mg/kg	32	22	60	28	38
14	Chloride as Cl	mg/kg	1.26	110	126	142	310
15	Sulphate as SO ₄	mg/kg	36	38	40	35	42
Sample Locations :							
S1 - Top soil (Kammathuru)							
S2 - Top soil (Deogiri)							
S3 - Top soil (SB Halli)							
S4 - Active Dump 1							
S5 - Active Dump 2							

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TEST REPORT

Table No. 23

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2678					
Particulars of sample		: Soil Samples					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)					
Date of sample collection		: 09.08.2024					
Issue Date		: 02.09.2024					
Lab Code			N/24/08/02-0102	N/24/08/02-0103	N/24/08/02-0104	N/24/08/02-0105	N/24/08/02-0106
SL. No.	Sample Code		S6	S7	S8	S9	S10
	PARAMETERS	Unit	Results				
PHYSICAL PROPERTIES							
1	Colour	--	Red Soil	Red Soil	Red Soil	Red Soil	Red soil
2	Textural class	--	Clay Loam	Clay Loam	Silty Clay	Silty Clay	Clay Loam
3	Size Distribution						
	Sand	%	34.11	31.86	39.66	38.36	41.33
	Clay	%	35.73	39.81	27.10	25.11	26.01
	Silt	%	30.16	28.33	33.24	36.00	32.66
4	Moisture Content	%	7.24	6.93	7.4	5.23	4.58
5	Bulk Density	gm/cc	11.86	2.33	1.8	1.65	1.78
6	Water holding capacity	%	37.21	32	33.85	35	38
7	pH	--	7.48	6.88	7.21	6.88	7.63
8	EC	m.mohs/cm	0.458	0.466	0.448	0.355	0.528
Chemical Properties							
9	Organic Carbon	%	0.53	0.68	0.53	0.54	0.40
10	Nitrogen as N	Kg/Ha	123	126	133	151	122
11	Phosphorous as P	Kg/Ha	30	45	48	50	40
12	Potassium as K ₂ O	Kg/Ha	133	153	144	146	130
13	Sodium as Na	mg/kg	52	45	40	55	36
14	Chloride as Cl	mg/kg	29	31	30	40	30
15	Sulphate as SO ₄	mg/kg	31	33	30	35	41
Sample Locations :							
S6 - Appayyanahalli agriculture lan							
S7 - Vitthalanagar agriculture land							
S8 - Swamihalli agriculture land							
S9 -Tonasigere agriculture land							
S10 - Yeshwanthnagar agriculture land							

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TEST REPORT

Table No. 24

Stack Monitoring Report

Report No. N010524083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KVH Iron Ore Mines
Stack ID & Capacity :	DG 1010 KVA (808 KW)
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	09.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	10.08.2024
Lab Code :	N/24/08/3-0105
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	30
3	Stack Temperature (°C)	172
4	Velocity (m/s)	14.81
5	Stack diameter (M)	0.30
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	3367
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	NOx (as NO ₂) (as 15% O ₂), dry basis	ppmv	29.75	360
2	NMHC (as C) (at 15 % O ₂)	mg/Nm ³	35.23	100
3	PM (as C) (at 15 % O ₂)	mg/Nm ³	32.00	75
4	CO (at 15 % O ₂)	(mg/Nm ³	49.00	

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TEST REPORT

Table No. 25

Stack Monitoring Report

Report No. N01064083

Name of the Client : The Sandur Manganese & Iron Ores Limited				
Name of the Mine : Deogiri Manganese & Iron Ore Mine (ML NO. 2678)				
Location	: Deogiri - Work Shop			
Stack ID & Capacity	: DG Set 160 KVA Doosan Light Source			
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services)			
Date of Collection	: 09.08.2024			
Particulars of Sample Collected	: Emissions from stack collected through stack sample VSS1			
Date of Sample Receipt	: 10.08.2024			
Lab Code	: N/24/08/3-0106			
Issue date	: 02.09.2024			
STACK DETAILS				
1	Fuel Used	Diesel		
2	Ambient Temperature (°C)	30		
3	Stack Temperature (°C)	133		
4	Velocity (m/s)	7.03		
5	Stack diameter (M)	0.15		
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	317		
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	0.04	<0.2
2	CO	g/Kw-hr	0.10	<3.5
3	Nox +HC	g/Kw-hr	0.13	<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. 26

Stack Monitoring Report

Report No. N01074083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Deogiri Manganese & Iron Ore Mine (ML NO. 2678)
Location :	RMK Pump House
Stack ID & Capacity :	DG Set 50 KVA water Pumping
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	09.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	10.08.2024
Lab Code :	N/24/08/3-0107
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	30
3	Stack Temperature (°C)	145
4	Velocity (m/s)	5.73
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	251
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	0.04	<0.2
2	CO	g/Kw-hr	0.07	<3.5
3	Nox +HC	g/Kw-hr	0.44	<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. 27

Stack Monitoring Report

Report No. N01084083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Deogiri Manganese & Iron Ore Mine (ML NO. 2678)
Location :	CBG Weigh Bridge
Stack ID & Capacity :	DG Set 20 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	09.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	10.08.2024
Lab Code :	N/24/08/3-0108
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature (°C)	30
3	Stack Temperature (°C)	105
4	Velocity (m/s)	7.18
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	348
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	0.10	<0.2
2	CO	g/Kw-hr	0.17	<3.5
3	Nox +HC	g/Kw-hr	0.82	<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. 28

Stack Monitoring Report

Report No. N01094083

Name of the Client : The Sandur Manganese & Iron Ores Limited				
Name of the Mine : Deogiri Manganese & Iron Ore Mine (ML NO. 2678)				
Location		: BMM Plot		
Stack ID & Capacity		: DG Set 100 KVA Doosan Light Source		
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)		
Date of Collection		: 09.08.2024		
Particulars of Sample Collected		: Emissions from stack collected through stack sample VSS1		
Date of Sample Receipt		: 10.08.2024		
Lab Code		: N/24/08/3-0109		
Issue date		: 02.09.2024		
1	Fuel Used	Diesel		
2	Ambient Temperature (°C)	30		
3	Stack Temperature (°C)	122		
4	Velocity (m/s)	12.89		
5	Stack diameter (M)	0.15		
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	597		
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	0.05	<0.2
2	CO	g/Kw-hr	0.01	<3.5
3	Nox +HC	g/Kw-hr	0.08	<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. 29

Stack Monitoring Report

Report No. N019224083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)
Location :	SBS -PLOT-SB HALLI
Stack ID & Capacity :	DG Set 160 KVA Mineral Processing
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	10.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	12.08.2024
Lab Code :	N/24/08/3-0192
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	138
4	Velocity (m/s)	8.33
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	371
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	0.05	<0.2
2	CO	g/Kw-hr	0.05	<3.5
3	Nox +HC	g/Kw-hr	0.23	<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. 30

Stack Monitoring Report

Report No. N019324083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KVH IO MINES - SB HALLI
Stack ID & Capacity :	DG Set 35 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	10.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	12.08.2024
Lab Code :	N/24/08/3-0193
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	111
4	Velocity (m/s)	6.39
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	304
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	0.13	<0.2
2	CO	g/Kw-hr	0.09	<3.5
3	Nox +HC	g/Kw-hr	0.10	<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. 31

Stack Monitoring Report

Report No. N019424083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Subrayanahalli Manganese & Iron Ore Mine (ML NO. 2678)
Location :	KVH IO MINES - SB HALLI
Stack ID & Capacity :	DG Set 125 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	10.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	12.08.2024
Lab Code :	N/24/08/3-0194
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	136
4	Velocity (m/s)	10.14
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	454
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	0.05	<0.2
2	CO	g/Kw-hr	0.04	<3.5
3	Nox +HC	g/Kw-hr	0.09	<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. 32

Stack Monitoring Report

Report No. N019524083

Name of the Client :	The Sandur Manganese & Iron Ores Limited
Name of the Mine :	Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location :	KTIO - Dump
Stack ID & Capacity :	DG Set 7.5 KVA Doosan Light Source
Sample Collected by :	Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection :	10.08.2024
Particulars of Sample Collected :	Emissions from stack collected through stack sample VSS1
Date of Sample Receipt :	12.08.2024
Lab Code :	N/24/08/3-0195
Issue date :	02.09.2024

STACK DETAILS

1	Fuel Used	Diesel
2	Ambient Temperature ($^{\circ}\text{C}$)	30
3	Stack Temperature ($^{\circ}\text{C}$)	134
4	Velocity (m/s)	7.13
5	Stack diameter (M)	0.15
6	Quantity of flue Gas Discharged into atmosphere (Nm^3/hr)	320
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	0.13	<0.2
2	CO	g/Kw-hr	0.04	<3.5
3	Nox +HC	g/Kw-hr	0.38	<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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