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/2024-25/2678/650

07 August 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 July 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 July 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,

for Md. Abdul Saleem,
Whole Time Director
& Company Secretary.

The Sandur Manganese & Iron Ores Ltd. DEOGIRI

09/08/2024

Encl: Monitoring Reports

National Accreditation Board for Testing and Calibration Laboratories

NABL

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

Speed Post

F.No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt./ 1601

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:

   i. **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.
   ii. **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.
   iii. **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,
   iv. **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).
   v. **Microbiological Test:** Total Coliform, Faecal Coliform, *E. coli, Faecal Streptococci* and Total Plate Count.
   vi. **Toxicological Tests:** Bioassay Method for Evaluation of Toxicity using Fish and Measurement of Toxicity Using Daphnia or Other Organism.
   vii. **Biological Test:** Macrophytic Identification, Planktonic Identification Count and Chlorophyll.

Contd.

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 (NO_2), Sulphur Dioxide (SO_2), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM_{10}, Ammonia, Carbon Monoxide, Chlorine, Lead, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-Pyrine & 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,

K. R 7/6/23

(Dr. K. Ranganathan)
Scientist-E & Divisional Head
Instrumentation laboratory

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 मंत्रालय, भारत सरकार
(M/o Environment, Forest & Climate Change, Govt. of India)
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली–110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

ENVIRONMENTAL MONITORING REPORT

July, 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)

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. 2678

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Station at & Code : A1, Mine Pit (SK) / (CBG)

Duration : 24 Hrs

Issue date : 01.08.2024

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)	
02.07.2024	N/24/07/1-0064	11	12	53	32	0.32
03.07.2024	N/24/07/1-0097	7	9	57	33	0.28
08.07.2024	N/24/07/03-0005	6	12	36	18	0.21
09.07.2024	N/24/07/03-0046	11	15	47	24	0.36
19.07.2024	N/24/07/4-0162	9	12	45	24	<0.2
20.07.2024	N/24/07/4-0220	10	11	37	19	0.42
22.07.2024	N/24/07/5-0001	11	13	56	16	0.36
23.07.2024	N/24/07/5-0050	7	11	42	24	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
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

Note : This report is subject to the terms and conditions mentioned overleaf.

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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A2, Kammathuru (within ML Area)
Duration : 24 Hrs
Issue date : 01.08.2024
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)	
02.07.2024	N/24/07/1-0065	9	12	45	24	0.38
03.07.2024	N/24/07/1-0098	11	12	49	28	0.22
08.07.2024	N/24/07/03-0006	12	15	53	30	0.20
09.07.2024	N/24/07/03-0047	7	13	56	32	0.28
19.07.2024	N/24/07/4-0163	9	11	40	26	0.31
20.07.2024	N/24/07/4-0221	10	12	51	24	0.45
22.07.2024	N/24/07/5-0002	9	10	38	19	0.41
23.07.2024	N/24/07/5-0051	7	11	35	17	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

ARSHIYA FOUSAR
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

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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A3, Deogiri (within ML Area)
Duration : 24 Hrs
Issue date : 01.08.2024
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)	
02.07.2024	N/24/07/1-0066	6	9	44	23	0.32
03.07.2024	N/24/07/1-0099	9	10	51	31	0.24
08.07.2024	N/24/07/03-0007	7	9	58	33	0.26
09.07.2024	N/24/07/03-0048	11	13	30	16	0.22
19.07.2024	N/24/07/4-0164	9	11	48	26	0.31
20.07.2024	N/24/07/4-0222	9	11	46	22	0.2
22.07.2024	N/24/07/5-0003	9	11	36	19	0.25
23.07.2024	N/24/07/5-0052	10	13	44	26	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

ARSHIYA KOUSAR
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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ISO 45001:2018 Certified Laboratory

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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A4, SBH Plot (Mine Boundary)
Duration : 24 Hrs
Issue date : 01.08.2024
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)	
02.07.2024	N/24/07/1-0067	12	14	48	25	0.23
03.07.2024	N/24/07/1-0100	7	10	38	25	0.34
08.07.2024	N/24/07/03-0008	10	11	53	28	0.41
09.07.2024	N/24/07/03-0049	<4	9	44	21	0.22
19.07.2024	N/24/07/4-0165	7	9	50	28	0.26
20.07.2024	N/24/07/4-0223	9	10	30	19	0.24
22.07.2024	N/24/07/5-0004	7	11	49	27	0.25
23.07.2024	N/24/07/5-0053	7	10	42	25	0.35
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
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

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 : 01.08.2024
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)	
02.07.2024	N/24/07/1-0068	9	12	47	26	0.22
03.07.2024	N/24/07/1-0101	9	11	50	26	0.31
08.07.2024	N/24/07/03-0009	9	11	54	27	0.24
09.07.2024	N/24/07/03-0050	7	9	45	24	0.42
19.07.2024	N/24/07/4-0166	11	11	37	19	0.33
20.07.2024	N/24/07/4-0224	6	8	54	30	0.25
22.07.2024	N/24/07/5-0005	9	11	50	28	0.24
23.07.2024	N/24/07/5-0054	4	9	36	19	0.29
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
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. 2678
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Station at & Code : A6, Appayyanahalli (Narayanpura)
Duration : 24 Hrs
Issue date : 01.08.2024
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)	
02.07.2024	N/24/07/1-0069	6	7	42	24	0.31
03.07.2024	N/24/07/1-0102	7	9	28	16	0.35
08.07.2024	N/24/07/03-0010	6	8	46	27	<0.2
09.07.2024	N/24/07/03-0051	11	12	52	28	0.22
19.07.2024	N/24/07/4-0167	10	12	35	19	0.33
20.07.2024	N/24/07/4-0225	9	13	50	27	0.27
22.07.2024	N/24/07/5-0006	9	11	30	19	0.24
23.07.2024	N/24/07/5-0055	8	12	38	20	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

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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ENVIRONMENTAL LABORATORY

(UNIT OF MINERAL ENGINEERING SERVICES)

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TC-6172

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 : 01.08.2024
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)	
02.07.2024	N/24/07/1-0070	12	14	58	30	0.20
03.07.2024	N/24/07/1-0103	11	13	50	28	0.24
08.07.2024	N/24/07/03-0011	6	11	37	16	0.45
09.07.2024	N/24/07/03-0052	9	13	44	25	0.38
19.07.2024	N/24/07/4-0168	7	11	45	28	0.32
20.07.2024	N/24/07/4-0226	11	14	42	23	0.28
22.07.2024	N/24/07/5-0007	12	18	46	26	0.26
23.07.2024	N/24/07/5-0056	11	13	52	29	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
Dy. T.M. Chemical
Govt. Analyst / Authorised Signatory

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

(UNIT OF MINERAL ENGINEERING SERVICES)

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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 : 01.08.2024

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)	
02.07.2024	N/24/07/1-0071	7	11	35	18	0.31
03.07.2024	N/24/07/1-0104	11	14	53	28	0.23
08.07.2024	N/24/07/03-0012	8	11	49	25	0.25
09.07.2024	N/24/07/03-0053	7	9	42	23	0.21
19.07.2024	N/24/07/4-0169	9	10	42	23	<0.2
20.07.2024	N/24/07/4-0227	<4	9	44	20	0.23
22.07.2024	N/24/07/5-0008	5	10	39	19	0.26
23.07.2024	N/24/07/5-0057	7	11	41	22	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.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 : 01.08.2024

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)	
02.07.2024	N/24/07/1-0072	6	12	36	18	0.28
03.07.2024	N/24/07/1-0105	9	14	48	26	0.24
08.07.2024	N/24/07/03-0013	7	12	50	28	0.31
09.07.2024	N/24/07/03-0054	6	13	36	19	0.22
19.07.2024	N/24/07/4-0170	9	11	48	27	0.26
20.07.2024	N/24/07/4-0228	5	10	38	18	0.33
22.07.2024	N/24/07/5-0009	7	11	48	25	0.24
23.07.2024	N/24/07/5-0058	11	13	53	27	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 : 01.08.2024
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)	
03.07.2024	N/24/07/1-0106	7	10	37	18	0.38
04.07.2024	N/24/07/1-0170	11	16	44	29	0.38
08.07.2024	N/24/07/03-0014	9	12	48	22	0.26
09.07.2024	N/24/07/03-0055	10	13	40	27	0.24
15.07.2024	N/24/07/4-0005	9	12	53	29	0.32
16.07.2024	N/24/07/4-0055	10	13	49	27	0.24
22.07.2044	N/24/07/5-0044	10	11	43	26	0.22
23.07.2024	N/24/07/5-0059	6	15	51	28	0.20
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 : **Deogiri Manganese & Iron Ore Mine (ML NO. 2678)**
Sample Collected by : **Environmental Laboratory (Unit of Mineral Engineering Services)**
Duration : **08 Hrs**
Issue Date : **01.08.2024**

Station at & Code	Date of sample	Lab Code	Particulate mater (µg/m^3)
FA1, Mine Face / Benches	20.07.2024	N/24/07/4-0229	244
FA2, Haulage Road / Service Road	20.07.2024	N/24/07/4-0230	356
FA3, Crushing & Screening Plant	20.07.2024	N/24/07/4-0231	296
FA4, Mineral Staock Yard / Loading	20.07.2024	N/24/07/4-0232	232
FA5, Active Waste Dump	20.07.2024	N/24/07/4-0233	387

Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)

	Particulate mater (µg/m^3)
Permissible limits for Fugitive Emissions	**600 µg/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 : **01.08.2024**

Station at & Code	Date of sample	Lab Code	Particulate mater (µg/m^3)
FA1, Mine Face / Benches	03.07.2024	N/24/07/1-0107	196
FA2, Haulage Road / Service Road	03.07.2024	N/24/07/1-0108	256
FA3, Crushing & Screening Plant	03.07.2024	N/24/07/1-0109	312
FA4, Mineral Staock Yard / Loading	03.07.2024	N/24/07/1-0110	285
FA5, Active Waste Dump	03.07.2024	N/24/07/1-0111	365

Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)

	Particulate mater (µg/m^3)
Permissible limits for Fugitive Emissions	**600 µg/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	**: 01.08.2024**

Station at & Code	**Date of sample**	**Lab Code**	**Particulate mater (µg/m^3)**
FA1, Mine Face / Benches	19.07.2024	N/24/07/4-0171	264
FA2, Haulage Road / Service Road	19.07.2024	N/24/07/4-0172	298
FA3, Crushing & Screening Plant	19.07.2024	N/24/07/4-0173	194
FA4, Mineral Staock Yard / Loading	19.07.2024	N/24/07/4-0174	165
FA5, Active Waste Dump	19.07.2024	N/24/07/4-0175	244

Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)

	Particulate mater (µg/m^3)
Permissible limits for Fugitive Emissions	**600 µg/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	01.07.2024 to 30.07.2024
4	Sample Type	Total Dust Fall Rate
5	Duration of Monitoring	One Month
6	Issue Date	01.08.2024

Result

Code	Location	Result	unit	Reference Method
DF1	Deogiri mines office	0.035	g/m^2 month	IS 5182 (Part 01) : 2006
DF2	Kammathuru (Near School)	0.010	g/m^2 month	IS 5182 (Part 01) : 2006
DF3	Appayyanahalli	0.009	g/m^2 month	IS 5182 (Part 01) : 2006
DF4	Subbarayanahalli (Near Hospital)	0.013	g/m^2 month	IS 5182 (Part 01) : 2006
DF5	Yeswanthanagar (Near Railway Track)	0.018	g/m^2 month	IS 5182 (Part 01) : 2006

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TEST REPORT

Table No. 15

AMBIENT NOISE LEVEL DATA

Report No : ELMES0092407

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 : 19.07.2024
Issue Date : 01.08.2024

Code No.	Monitoring stations	Day			Night		
		L_{min}	L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}
	Corezone						
N1	Mine Pit (SK/CBG)	37.0	49.5	55.0	34.0	43.2	45.3
N2	Kammathuru ML Area	37.3	51.5	58.0	35.0	42.4	46.0
N3	Deogiri ML Area	36.0	47.3	52.0	34.0	41.7	44.0
N4	SBS Plot (Mine Boundary)	36.0	48.7	54.0	34.0	40.5	45.3
N5	SB Halli ML Area	40.0	52.9	57.0	33.9	41.6	44.6
N6	Mine area	43.0	54.3	60.0	34.0	41.9	49.3
	Bufferzone						
N7	Appayanahalli (Narayanapura)	36.0	47.8	54.0	34.0	37.8	43.0
N8	Vitthalanagar (Navalatti)	38.0	50.6	55.3	33.8	42.0	45.0
N9	Swamihalli	36.0	45.4	50.1	34.0	41.8	43.6
N10	Yeshwanthnagar	38.0	48.1	53.5	34.0	40.3	44.8
N11	Tonasingeri	36.0	49.3	52.3	33.6	41.1	43.0
N12	Kumaraswamy Temple	37.3	48.6	56.3	34.6	42.9	47.0

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 : N007224072

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	: 09.07.2024
Lab Code	: N/24/07/2-0072
Issue Date	: 17.07.2024

Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Sample Code / Parameters	STP1 / Results	Method of Testing
1	pH	6.75	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD_3 27^0 C, mg/l	64	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105^0C, mg/l	156	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	14	APHA-23rd Edition

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TEST REPORT

Table No. 17

Report No : N007324072

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	: 09.07.2024
Lab Code	: N/24/07/2-0073
Issue Date	: 17.07.2024

Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Sample Code / Parameters	STP2 / Results	Sewage Effluent Discharge Standards	Method of Testing
1	pH	6.62	5.5to 9.0	IS 3025 (P-11)2017
2	Biochemical Oxygen Demand BOD_3 27^0 C, mg/l	28	<30	IS 3025 (P-44) 1993 RA 2019
3	Total Suspended Solids, at 105^0C, mg/l	54	<50	IS 3025 (P-16)1984 RA 2017
4	Fecal coliform, MPN/100ml	4	<1000	APHA-23rd 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	: 09.07.2024
Date of sample receipt	: 10.07.2024
Issue Date	: 17.07.2024

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

Lab Code		N/24/07/02-0062	N/24/07/02-0063	N/24/07/02-0064	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results				
		SW1	SW2	SW3		
1	pH	7.54	6.81	6.58	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	<1.0	<1.0	<1.0	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	260	120	150	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	24	12	28	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O_2), mg/l, Max	5.2	5.4	5.1	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 & Greease, mg/l	<0.1	<0.1	<0.1	0.1	IS:3025(Part 39)2021
9	Total Hardness (as $CaCO_3$),mg/l,Max	180	83.64	93.84	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO_4 (mg/l), Max	28	2.4	4.2	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	46.3	31.7	12.5	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	0.2	<0.1	<0.1	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H_2S) , 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	0.01	<0.005	<0.005	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	30	28	24	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	3.2	<0.5	<0.5	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	63	58	76	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	: 09.07.2024
Date of sample receipt	: 10.07.2024
Issue Date	: 17.07.2024

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

Lab Code		N/24/07/02-0065	N/24/07/02-0066	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	Results			
		SW4	SW5		
1	pH	6.64	7.76	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	<1	<1	300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable	-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	110.0	410.0	1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	<5	25	-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O_2), mg/l, Max	5.40	5.20	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 & Greease, mg/l	<0.1	<0.1	0.1	IS:3025(Part 39)2021
9	Total Hardness (as $CaCO_3$),mg/l,Max	16	142	-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO_4 (mg/l), Max	1.85	38.6	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	13.59	82.05	600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	<0.1	0.4	1.5	APHA 23rd Edition 4500F
14	Sulphide (as H_2S) , 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	<0.005	<0.005	50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	12.00	18.00	-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.5	<0.5	-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	23	94	5000	IS:1622:1981

"'END OF REPORT"

BINUMANI
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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 : **09.07.2024**
Issue Date : **17.07.2024**
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Lab Code / Sample Code / Parameters	N/24/07/02-0067 GW1 Results	N/24/07/02-0068 GW2 Results	N/24/07/02-0069 GW3 Results	Desirable Limts	Permissible Limts	Method of Testing
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	6.54	6.75	7.12	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	<0.1	<0.1	<0.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)	120.0	290.0	1050.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	80.0	180.0	658.0	500	2000	IS:3025 (P-16)1984 RA2017
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	12.00	24.00	121.82	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	16.72	42.00	133.32	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	<0.1	<0.1	<0.1	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe),mg/l, Max	<0.005	<0.005	<0.005	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg)mg/l, Max	4.86	14.58	39.66	30	100	IS:3025 (P-46)1994 RA 2019
15	Manganese (as Mn),mg/l, Max	<0.001	<0.001	<0.001	0.1	0.3	IS:3025 (P-2) 2019
16	Nitrates (as NO_3),mg/l, Max	2.30	1.53	18.00	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	12.50	5.80	78.90	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	10.00	75.0	325.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	50.0	120.0	467.0	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	5	12	64	-	-	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	<1	4	15	-	-	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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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 : **09.07.2024**
Issue Date : **17.07.2024**
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

Sl. No.	Lab Code / Sample Code / Parameters	N/24/07/02-0070 GW4 Results	N/24/07/02-0071 GW5 Results	Desirable Limts	Permissible Limts	Method of Testing
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	7.21	6.86	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	<0.1	<0.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductvity (µmhos/cm)	1590.0	1180.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	1050.0	860.0	500	2000	IS:3025 (P-16)1984 RA2017
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	121.84	97.29	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	254.98	47.14	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	<0.1	<0.1	1	1.5	IS:3025 (P-60) 2008 RA 2019
13	Iron (as Fe),mg/l, Max	<0.005	<0.005	1.0	1.0	IS:3025 (Part-2) 2019
14	Magnesium (as Mg)mg/l, Max	23.33	52.06	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	44.00	1.80	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	58.50	74.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as $CaCO_3$) mg/l, Max	405.0	570.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as $CaCO_3$),mg/l,Max	400.0	460.0	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	164	135	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	25	21	--	--	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 : 08.07.2024
Issue Date : 01.08.2024

	Lab Code		N/24/07/02-0076	N/24/07/02-0077	N/24/07/02-0078	N/24/07/02-0079	N/24/07/02-0080
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	%	31.24	36.02	32.99	32.14	36.11
	Clay	%	40.63	33.87	27.77	39.86	37.77
	Silt	%	28.13	30.11	39.24	28.00	26.12
4	Moisture Content	%	7.11	6.54	7.13	5.8	7.12
5	Bulk Density	gm/cc	1.58	1.72	1.55	1.88	1.45
6	Water holding capacity	%	33.24	29.22	22	26.88	24.13
7	pH	--	6.66	6.58	7.21	7.44	6.44
8	EC	m.mohs/cm	0.192	0.271	0.2	0.251	0.162
Chemcial Properties							
9	Organic Carbon	%	0.61	0.35	0.21	1.85	2.62
10	Nitrogen as N	Kg/Ha	126	242	123	132	190
11	Phosphorous as P	Kg/Ha	8.22	9.36	7.21	7.6	7.31
12	Potassium as K_2O	Kg/Ha	1.75	133	119	130	132
13	Sodium as Na	mg/kg	30	20	62	30	44
14	Chloride as Cl	mg/kg	122	106	130	146	318
15	Sulphate as SO_4	mg/kg	38	40	42	38	44

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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TC-6172

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 : 08.07.2024
Issue Date : 01.08.2024

	Lab Code		N/24/07/02-0081	N/24/07/02-0082	N/24/07/02-0083	N/24/07/02-0084	N/24/07/02-0085
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	Slity Clay	Slity Clay	Clay Loam
3	Size Distribution						
	Sand	%	34.96	31.25	40.26	38.45	41.88
	Clay	%	34.22	39.07	26.18	25.44	24.21
	Silt	%	30.82	29.68	33.56	36.11	33.91
4	Moisture Content	%	7.28	6.85	7.42	5.18	4.63
5	Bulk Density	gm/cc	11.93	2.3	1.85	1.62	1.82
6	Water holding capacity	%	39	34	35	37	40
7	pH	--	7.63	6.92	7.85	6.93	7.66
8	EC	m.mohs/cm	0.448	0.466	0.442	0.351	0.538
Chemcial Properties							
9	Organic Carbon	%	0.51	0.71	0.51	0.52	0.46
10	Nitrogen as N	Kg/Ha	128	130	135	1.54	127
11	Phosphorous as P	Kg/Ha	32	46	50	52	41
12	Potassium as K_2O	Kg/Ha	136	150	148	144	133
13	Sodium as Na	mg/kg	49	47	42	58	40
14	Chloride as Cl	mg/kg	31	30	34	42	32
15	Sulphate as SO_4	mg/kg	33	29	32	38	42

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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TC-6172

TEST REPORT

Table No. 24

Stack Monitoring Report

Report No.N017624074

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 & Capcity : DG 1010 KVA (808 KW)

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 19.07.2024

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

Date of Sample Receipt : 20.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	29
3	Stack Temperature (^{0}C)	166
4	Velocity (m/s)	14.78
5	Stack diameter (M)	0.30
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	3371
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	32.34	360
2	NMHC (as C) (at 15 % O_2)	mg/Nm3	36.11	100
3	PM (as C) (at 15 % O_2)	mg/Nm3	26.00	75
4	CO (at 15 % O2)	(mg/Nm3	57.00	150

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TC-6172

TEST REPORT

Table No. 25

Stack Monitoring Report

Report No.N017724074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Deogiri Manganese & Iron Ore Mine (ML NO. 2678)

Location : Katasinkolla

Stack ID & Capcity : DG Set 62.5 KVA

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 19.07.2024

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

Date of Sample Receipt : 20.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	29
3	Stack Temperature (^{0}C)	138
4	Velocity (m/s)	6.71
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	299
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	0.06	<3.5
3	Nox +HC	g/Kw-hr	0.51	<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.N017824074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Subrayanahallul Manganese & Iron Ore Mine (ML NO. 2678)

Location : KVH Iron Ore Mine

Stack ID & Capcity : DG Set 6.0 KVA Doosan Light Source

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 19.07.2024

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

Date of Sample Receipt : 20.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	29
3	Stack Temperature (^{0}C)	136
4	Velocity (m/s)	5.39
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	241
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	0.120	<0.2
2	CO	g/Kw-hr	0.08	<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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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

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TC-6172

TEST REPORT

Table No. 27

Stack Monitoring Report

Report No.N017924074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Deogiri Manganese & Iron Ore Mine (ML NO. 2678)

Location : KTION Work Shop

Stack ID & Capcity : DG Set 6.0 KVA Doosan Light Source

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 19.07.2024

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

Date of Sample Receipt : 20.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	29
3	Stack Temperature (^{0}C)	124
4	Velocity (m/s)	2.47
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	114
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	0.057	<0.2
2	CO	g/Kw-hr	0.06	<3.5
3	Nox +HC	g/Kw-hr	0.25	<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

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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TEST REPORT

Table No. 28

Stack Monitoring Report

Report No.N023424074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Kammathuru Iron Ore (KTIO) (ML No. 2678)

Location : KTIO Sub Station

Stack ID & Capcity : DG Set 125 KVA

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 20.07.2024

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

Date of Sample Receipt : 22.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	28
3	Stack Temperature (^{0}C)	130
4	Velocity (m/s)	13.11
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	596
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	0.033	<0.2
2	CO	g/Kw-hr	0.01	<3.5
3	Nox +HC	g/Kw-hr	0.11	<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

ARSHIYA KOUSAR
Dy. T.M. Chemical
Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No.29

Stack Monitoring Report

Report No.N023524074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Kammathuru Iron Ore (KTIO) (ML No. 2678)

Location : KTIO Sub Station

Stack ID & Capcity : DG Set 82.5 KVA

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 20.07.2024

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

Date of Sample Receipt : 22.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	28
3	Stack Temperature (^{0}C)	100
4	Velocity (m/s)	7.91
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	389
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	0.093	<0.2
2	CO	g/Kw-hr	0.31	<3.5
3	Nox +HC	g/Kw-hr	0.62	<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

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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TEST REPORT

Table No. 30

Stack Monitoring Report

Report No.N023624074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Kammathuru Iron Ore (KTIO) (ML No. 2678)

Location : KTIO - D-09 Dump

Stack ID & Capcity : DG Set 7.5 KVA

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 20.07.2024

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

Date of Sample Receipt : 22.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	28
3	Stack Temperature (^{0}C)	136
4	Velocity (m/s)	5.69
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	121
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	0.064	<0.2
2	CO	g/Kw-hr	0.03	<3.5
3	Nox +HC	g/Kw-hr	0.18	<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

ARSHIYA HOUSAR
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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TEST REPORT

Table No. 31

Stack Monitoring Report

Report No.N023724074

Name of the Client : The Sandur Manganese & Iron Ores Limited

Name of the Mine : Kammathuru Iron Ore (KTIO) (ML No. 2678)

Location : KTIO - Work Shop

Stack ID & Capcity : DG 6 KVA Doosan Light Source

Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)

Date of Collection : 20.07.2024

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

Date of Sample Receipt : 22.07.2024

Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	28
3	Stack Temperature (^{0}C)	120
4	Velocity (m/s)	2.81
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	131
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	0.043	<0.2
2	CO	g/Kw-hr	0.07	<3.5
3	Nox +HC	g/Kw-hr	0.55	<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

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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ISO 45001:2018 Certified Laboratory
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TEST REPORT

Table No. 32

Stack Monitoring Report

Report No.N023824074

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Mine : Kammathuru Iron Ore (KTIO) (ML No. 2678)
Location : KTIO - Work Shop
Stack ID & Capcity : DG 6 KVA Doosan Light Source
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services)
Date of Collection : 20.07.2024
Particulars of Sample Collected : Emissions from stack collected through stack sample VSS1
Date of Sample Receipt : 22.07.2024
Issue date : 01.08.2024

STACK DETAILS

1	Fuel Used	Diesel
2	AmbientTemperature (^{0}C)	28
3	Stack Temperature (^{0}C)	212
4	Velocity (m/s)	2.27
5	Stack diameter (M)	0.15
6	Quanitity of flue Gas Discharged into atmosphere (Nm^3/hr)	105
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	0.053	<0.2
2	CO	g/Kw-hr	0.04	<3.5
3	Nox +HC	g/Kw-hr	0.46	<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

ARSHIYA KOUSAR
Dy. T.M. Chemical
Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No. 33

Report No : N027024074

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	: Kammathuru Mines Run off Water
Date of sample collection	: 19.07.2024
Lab Code	: N/24/07/4-0270
Issue Date	: 31.07.2024

Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Parameters	Results	General Standards For Effluent Discharge of Environmental Pollutants	Method of Testing
1	pH	6.87	5.5 to 9.0	IS 3025 (P-11) 2022
2	COD (mg/l), Max	36	250	IS 3025 (P-58) 2006 RA2022
3	Total Suspended Solids (mg/l), Max	39	Non Rainy Day 50, Rainy Day 100	IS 3025 (P-17) 2022
4	Total Dissolved Solids (TDS) mg/l	130	--	IS 3025(P- 16)02022
5	Dissolved Oxygen (as O_2), mg/l	5.8	--	IS:3025(P-38) 1981 RA 2019
6	Iron (as Fe), mg/l	0.132	3	IS 3025 (P-2) 2019
7	Manganese (as Mn), mg/l	0.056	2	IS 3025 (P-2) 2019

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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(UNIT OF MINERAL ENGINEERING SERVICES)

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TC-6172

TEST REPORT

Table No. 34

Report No : N027124074

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	: Deogiri Mines Run off Water
Date of sample collection	: 19.07.2024
Lab Code	: N/24/07/4-0271
Issue Date	: 31.07.2024

Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Parameters	Results	General Standards For Effluent Discharge of Environmental Pollutants	Method of Testing
1	pH	6.82	5.5 to 9.0	IS 3025 (P-11) 2022
2	COD (mg/l), Max	40	250	IS 3025 (P-58) 2006 RA2022
3	Total Suspended Solids (mg/l), Max	42	Non Rainy Day 50, Rainy Day 100	IS 3025 (P-17) 2022
4	Total Dissolved Solids (TDS) mg/l	142	--	IS 3025(P- 16)02022
5	Dissolved Oxygen (as O_2), mg/l	5.9	--	IS:3025(P-38) 1981 RA 2019
6	Iron (as Fe), mg/l	0.186	3	IS 3025 (P-2) 2019
7	Manganese (as Mn), mg/l	0.063	2	IS 3025 (P-2) 2019

ARSHIYA HOUSAR
Dy. T.M. Chemical

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
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TC-6172

TEST REPORT

Table No. 35

Report No : N027224074

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	: SB Halli Mines Run off Water
Date of sample collection	: 19.07.2024
Lab Code	: N/24/07/4-0272
Issue Date	: 31.07.2024

Ref: G S R 1265 (e) and Schedule VI (Rule 3A of EP rule 1986)

Sl. No.	Parameters	Results	General Standards For Effluent Discharge of Environmental Pollutants	Method of Testing
1	pH	6.95	5.5 to 9.0	IS 3025 (P-11) 2022
2	COD (mg/l), Max	42	250	IS 3025 (P-58) 2006 RA2022
3	Total Suspended Solids (mg/l), Max	69	Non Rainy Day 50, Rainy Day 100	IS 3025 (P-17) 2022
4	Total Dissolved Solids (TDS) mg/l	146	--	IS 3025(P- 16)02022
5	Dissolved Oxygen (as O_2), mg/l	5.5	--	IS:3025(P-38) 1981 RA 2019
6	Iron (as Fe), mg/l	0.152	3	IS 3025 (P-2) 2019
7	Manganese (as Mn), mg/l	0.032	2	IS 3025 (P-2) 2019

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

Note : This report is subject to the terms and conditions mentioned overleaf.

Speed Post

F.No. LB/99/7/2021-INST LAB-HO-CPCB-HO/Pvt./ 1601

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:

   i. **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.
   ii. **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.
   iii. **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,
   iv. **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).
   v. **Microbiological Test:** Total Coliform, Faecal Coliform, *E. coli, Faecal Streptococci* and Total Plate Count.
   vi. **Toxicological Tests:** Bioassay Method for Evaluation of Toxicity using Fish and Measurement of Toxicity Using Daphnia or Other Organism.
   vii. **Biological Test:** Macrophytic Identification, Planktonic Identification Count and Chlorophyll.

Contd.

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 (NO_2), Sulphur Dioxide (SO_2), Total Suspended Particulate Matter, Respirable Suspended Particulate Matter PM_{10}, Ammonia, Carbon Monoxide, Chlorine, Lead, Ozone, Benzene Toluene Xylene (BTX), Polycyclic Aromatic Hydrocarbon (PAH) Benzo-a-Pyrine & 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,

K. R 7/6/23

(Dr. K. Ranganathan)
Scientist-E & Divisional Head
Instrumentation laboratory

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 मंत्रालय, भारत सरकार
(M/o Environment, Forest & Climate Change, Govt. of India)
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली–110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ENVIRONMENTAL LABORATORY (UNIT OF MINERAL ENGINEERING SERVICES LLP)

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: 18/01/2024 **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 Entity: MINERAL ENGINEERING SERVICES LLP

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer