

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

No: SMIORE/MN/070425/2679/46

07 April 2025

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



Dear Sir,

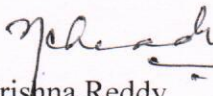
Sub: Submission of reports pertaining to monitoring of environmental parameters for the month of March 2025 in respect of Mining Lease No. 2679.

Ref: 1. EC Identification No. EC24B0000KA5391575N dated 01 September 2024.
2. Consent for Operation No. AW-337273 dated 10 April 2023.

With reference to the letter cited above, we are enclosing herewith environmental monitoring reports from NABET accredited and MoEFCC empaneled laboratory M/s Mineral Engineering Services as per stipulated environmental parameters in Environmental Clearance and Consent for Operation-Expansion for the month of March 2025 in respect of Mining Lease No. 2679, Ramghad Manganese & Iron Ore Mine of The Sandur Manganese & Iron Ores Limited.

Kindly request you to acknowledge receipt of the reports and oblige.

Thank you,
for The Sandur Manganese & Iron Ores Limited,


Krishna Reddy
Vice President - Mines



Encl: Monitoring Reports

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

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

PLANT OFFICE: Metal & Ferroalloy Plant, Vvasankere, Marivammanahalli - 583 222, Hosapete Taluk, Ballari District

ENVIRONMENTAL MONITORING REPORT

March, 2025

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

Lessee

The Sandur Manganes & Iron Ores Limited

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

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Recognised by MoEFCC(CPCB) under E(P) Act 1986 Recognition valid upto 23.05.2025

TEST REPORT

Table No.1

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A1, Core Zone (ML Area)
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N015825033	11	16	46	28	0.24
08.03.2025	N022925033	10	12	49	29	0.33
14.03.2025	P020825033	9	12	50	31	0.21
15.03.2025	P026225033	13	17	44	28	0.32
17.03.2025	P030225033	14	18	49	25	0.20
18.03.2025	P037225033	11	13	57	34	0.26
26.03.2025	P019925035	10	12	40	24	0.22
27.03.2025	P022925035	12	16	47	28	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
 ARSHIYA KOUSAR
 Dy. T.M. - Chemical
 Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
 Phone : 080-25432969 Tel/fax : 25432968. E-mail : mesbng@gmail.com, www.envtest.in

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TEST REPORT

Table No.2

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A2, Core Zone (Myadara Banda Block)
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N016025033	10	14	42	19	0.26
08.03.2025	N023125033	13	18	54	32	0.28
14.03.2025	P021025033	11	12	48	25	0.27
15.03.2025	P026425033	9	11	50	28	0.25
17.03.2025	P030425033	12	15	47	30	0.24
18.03.2025	P037425033	8	9	45	27	0.25
26.03.2025	P020125035	12	16	42	25	0.23
27.03.2025	P023125035	13	18	53	28	0.22
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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

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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. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A3, Core Zone (Governor Point)
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N016125033	12	18	55	30	0.22
08.03.2025	N023225033	11	14	40	27	0.33
14.03.2025	P021125033	9	15	37	21	0.25
15.03.2025	P026525033	12	17	43	22	0.25
17.03.2025	P030525033	10	13	54	28	0.23
18.03.2025	P037525033	7	9	45	26	0.21
26.03.2025	P020225035	11	13	42	22	0.22
27.03.2025	P023225035	10	11	53	28	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

Arshiya Kousar
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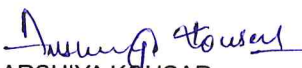
TEST REPORT

Table No.4

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A4, Core Zone (Neerlabi)
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N016225033	10	14	56	30	0.21
08.03.2025	N023325033	12	14	50	27	0.25
14.03.2025	P021225033	11	16	48	29	0.23
15.03.2025	P026625033	7	10	59	33	0.21
17.03.2025	P030625033	11	12	56	32	0.30
18.03.2025	P037625033	12	14	46	26	0.25
26.03.2025	P020325035	9	10	49	27	0.22
27.03.2025	P023325035	10	15	53	29	0.21
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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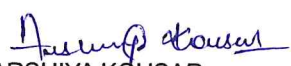
TEST REPORT

Table No.5

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A5, Ramghad village
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N016325033	10	12	50	26	0.28
08.03.2025	N023425033	7	11	53	28	0.25
14.03.2025	P021325033	12	16	55	30	0.22
15.03.2025	P026725033	7	9	52	22	0.25
17.03.2025	P030725033	10	11	48	25	0.26
18.03.2025	P037725033	9	12	37	19	0.21
26.03.2025	P020425035	9	11	45	21	<0.2
27.03.2025	P023425035	7	9	28	21	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
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TEST REPORT

Table No.6

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A6, Dharmapura village
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N016425033	7	9	30	16	0.25
08.03.2025	N023525033	6	9	50	28	0.24
14.03.2025	P021425033	4	9	47	24	0.22
15.03.2025	P026825033	10	11	53	26	0.25
17.03.2025	P030825033	9	11	43	23	0.21
18.03.2025	P037825033	6	10	40	22	<0.2
26.03.2025	P020525035	7	10	48	24	0.23
27.03.2025	P023525035	10	15	51	24	0.22
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr

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

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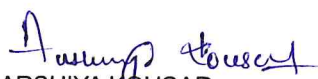
Recognised by MoEFCC(CPCB) under E(P) Act 1986 Recognition valid upto 23.05.2025

TEST REPORT

Table No.7

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited						
Name of the Project : Mining Lease No. 2679						
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)						
Station at & Code : A7, Garaga village						
Duration : 24 Hrs						
Issue date : 01.04.2025						
Reference IS 5182 & Lab SOP						
Date of Sampling	Report No	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)	
07.03.2025	N016525033	7	11	48	23	0.28
08.03.2025	N023625033	8	14	46	22	0.21
14.03.2025	P021525033	8	11	53	29	<0.2
15.03.2025	P026925033	11	17	49	22	0.2
17.03.2025	P030925033	9	11	54	31	0.23
18.03.2025	P037925033	9	19	47	26	<0.2
26.03.2025	P020625035	14	15	40	23	0.21
27.03.2025	P023625035	9	13	46	28	0.25
Limits for Industrial , Residential, Rural and other Areas		80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	2 8 Hr


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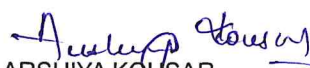
TEST REPORT

Table No.8

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
Name of the Project : Mining Lease No. 2679
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
Station at & Code : A8, Yeswanthanagar
Duration : 24 Hrs
Issue date : 01.04.2025
Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N015325033	11	14	50	19	0.21
08.03.2025	N022525033	10	16	51	26	0.23
10.03.2025	P001325033	9	11	55	29	0.33
11.03.2025	P009625033	10	11	48	24	0.26
21.03.2025	P000925034	13	18	50	26	0.22
22.03.2025	P008525034	8	12	57	28	0.45
24.03.2025	P000925035	10	12	54	28	0.41
25.03.2025	P010925035	12	16	50	31	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 KOUSAR
Dy. T.M. - Chemical
Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No.9

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A9, Subbarayanahalli
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N014925033	11	15	43	24	0.31
08.03.2025	N022125033	9	12	53	26	0.25
10.03.2025	P000925033	11	13	44	24	0.22
11.03.2025	P009225033	10	12	57	35	0.36
21.03.2025	P000525034	11	13	46	25	0.41
22.03.2025	P008125034	8	13	55	30	0.25
24.03.2025	P000525035	11	15	48	36	0.36
25.03.2025	P010525035	8	10	40	26	0.44
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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Govt. Analyst / Authorised Signatory

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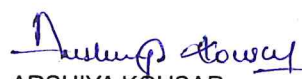
TEST REPORT

Table No.10

AMBIENT AIR QUALITY

Name of the Client : The Sandur Manganese & Iron Ores Limited
 Name of the Project : Mining Lease No. 2679
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A10, Siddapura village
 Duration : 24 Hrs
 Issue date : 01.04.2025
 Reference IS 5182 & Lab SOP

Date of Sampling	Report No	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)	
07.03.2025	N015925033	10	12	43	24	0.22
08.03.2025	N023025033	11	16	56	30	0.26
14.03.2025	P020925033	12	14	40	24	0.21
15.03.2025	P026325033	10	12	51	27	0.27
17.03.2025	P030325033	14	19	47	28	0.27
18.03.2025	P037325033	12	13	41	24	0.22
26.03.2025	P020025035	12	14	55	30	0.27
27.03.2025	P023025035	8	13	48	27	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


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 Dy. T.M. - Chemical
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TEST REPORT

Table No. 11

Fugitive Emission

Name of the Client : The Sandur Manganese & Iron Ores Limited			
Name of the Project : Mining Lease No. 2679			
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)			
Duration : 08 Hrs			
Issue Date : 01.04.2025			
Station at & Code	Date of sample	Report No	Particulate mater ($\mu\text{g}/\text{m}^3$)
FA1, Loading point	14.03.2025	P021625033	297
FA2, Dumping point	14.03.2025	P021725033	368
FA3, Haulage Road	14.03.2025	P021825033	451
FA4, Stack Yard	15.03.2025	P027025033	333
FA5, Drilling Point	15.03.2025	P027125033	498
FA6, Waste Dumping Point	15.03.2025	P027225033	425
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)			
			Particulate mater ($\mu\text{g}/\text{m}^3$)
Permissible limits for Fugitive Emissions			600 $\mu\text{g}/\text{m}^3$

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TEST REPORT

Table No. 12

Analysis Report of Dust Fall Measurement

1	Name of the Client	The Sandur Manganese & Iron Ores Limited
2	Name of the Project	Mining Lease No. 2679
3	Month	01.03.2024 to 31.03.2025
4	Sample Type	Total Dust Fall Rate
5	Duration of Monitoring	One Month
6	Issue Date	01.04.2025

Result

Code	Location	Result	unit	Reference Method
DF1	Mine Office Area	0.028	$\text{g/m}^2 \text{ month}$	IS 5182 (Part 01) : 2006
DF2	Near Crusher Area	0.039	$\text{g/m}^2 \text{ month}$	IS 5182 (Part 01) : 2006

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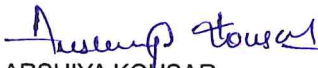
TEST REPORT

Table No. 13

AMBIENT NOISE LEVEL DATA

Report No : EELMES092503

Name of the Client		: The Sandur Manganese & Iron Ores Limited																				
Name of the Project		: Mining Lease No. 2679																				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)																				
Date of monitoring		: 14.03.2025																				
Date of sample receipt		: 15.03.2025																				
Issue Date		: 25.03.2025																				
Code No.	Monitoring stations	Day			Night																	
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}															
Corezone																						
N1	Core zone ML Area	36.0	53.4	60.2	34.0	43.1	48.0															
N2	Myadara Banda Block	37.0	51.2	57.0	35.0	42.8	46.9															
N3	Goerner Point	40.0	53.3	58.3	35.0	42.4	47.5															
N4	Neerlabbi	40.0	53.4	57.6	35.0	45.6	50.0															
Buffer zone																						
N5	Ramgad village	35.0	49.4	58.2	34.0	41.6	45.8															
N6	Dharmapura	36.5	51.1	56.8	35.0	41.0	46.2															
N7	Garaga village	35.0	46.3	52.8	33.0	38.6	45.0															
N8	Yeshwanthanagar	36.0	52.4	57.2	34.0	41.0	47.2															
N9	Subbarayanahalli	36.2	49.5	55.2	35.3	41.9	47.0															
N10	Siddapura	41.8	50.7	57.8	34.5	43.4	48.0															
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines <table border="1"> <thead> <tr> <th></th> <th colspan="2">Leq. Limit dB(A)</th> </tr> <tr> <th></th> <th>Day</th> <th>Night</th> </tr> </thead> <tbody> <tr> <td>Industrial areas</td> <td>75</td> <td>70</td> </tr> <tr> <td>Commercial area</td> <td>65</td> <td>55</td> </tr> <tr> <td>Residential area</td> <td>55</td> <td>45</td> </tr> </tbody> </table>									Leq. Limit dB(A)			Day	Night	Industrial areas	75	70	Commercial area	65	55	Residential area	55	45
	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. 14

NOISE LEVEL DATA

Report No : EELMES0102503

Name of the Client		: M/s. Sandur Manganese & Iron Ores Limited			
Name of the Project		: Mining Lease No. 2679			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)			
Date of monitoring		: 15.03.2025			
Date of sample receipt		: 17.03.2025			
Issue Date		: 25.03.2025			
Code No.	Monitoring stations	Day			Remarks
		L _{min}	L _{eq}	L _{max}	
Source					
N1	Loading Point	43.8	69.7	77.0	During operation
N2	Dumping Point	45.0	73.1	82.0	During operation
N3	Haulage Road	48.0	74.2	83.0	During operation
Permissible Limits of Ambient					
Noise Levels as per CPCB Guidelines					
Leq. Limit dB(A)					
Day Night					
Industrial areas		75	70		
Heavy Earth Moving Machineries					
N4	Wheel Loader	43.2	81.6	88.0	During operation in side of the cabin
		42.0	75.1	80.0	During operation 10mts outside of the cabin
N5	Tata Hitachi 200LC	44.0	77.4	85.0	During operation in side of the cabin
		41.0	75.1	82.0	During operation 10mts outside of the cabin
Permissible limits as per ILO Code of Practice					
For Unprotected ear - 8 hrs working shift					
Warning limit - 85 dB(A)					
Danger limit - 90 dB(A)					
Worker not to be exposed for more than 115 dB(A)					
With ear protection -					
130 dB(A) 'Impulse' or 120 dB(A) 'Fast'					
No entry when noise level exceeds 140 dB(A)					

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TEST REPORT

Table No.15

Name of the Client		: The Sandur Manganese & Iron Ores Limited					
Name of the Project		: Mining Lease No. 2679					
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)					
Particulars of sample collected		: SW1 - Ragavapura kere water, SW2 - Dhananayakana kere water					
		: SW3 - Narihalla Upstream water, SW4 - Narihalla Downstream water					
Date of sample collection		: 10.03.2025					
Date of sample receipt		: 11.03.2025					
Issue Date		: 18.03.2025					
Ref:IS : 2296, Water Quality Standards							
Report No		N/033325033	N/033425033	-	-	Limits For Stream Water Standards	Method of Testing
Sl.No.	Samples Code	SW1	SW2	SW3	SW4		
	Parameters	Results					
1	pH	8.36	8.34	Dry	Dry	6.5 to 8.5	IS:3025(Part-11)2022
2	Colour (Hazen Units), Max	5	5			300	IS:3025(Part-4)2021
3	Odour	Agreeable	Agreeable			-	IS:3025 (P-5) 2018
4	Total Dissolved Solids (mg/l), Max	600	174			1500	IS:3025(Part-16)2023
5	Total Suspended Solids, mg/l	52	68			-	IS 3025 (P-17) 2022
6	Dissolved Oxygen (as O ₂), mg/l,	5.3	5.5			Min 4	IS:3025(Part-38)1989RA 2019
7	Biochemical Oxygen Demand (as O ₂), mg/l	<3.0	<3.0			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	220	82			-	IS:3025 (P-21):2009 RA 2019
10	Sulphates as SO ₄ (mg/l), Max	160	30			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	100	25			600	IS:3025(Part-32) ;1988RA2019
13	Fluoride (as F),mg/l, Max	1.15	1.08			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	<0.005	<0.005			50	IS:3025(P-2) 2019
17	Percent of Sodium (%)	12	11.2			-	IS 11624 .2009
18	Residual Sodium Carbonate (meq/l)	<0.05	<0.05			-	IS:2488 (P-5) 1976
19	Total Coliform, MPN/100ml	180	200			5000	IS:1622:1981

""END OF REPORT""

BINU MANI

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TEST REPORT

Table No. 16

Name of the Client		: The Sandur Manganese & Iron Ores Limited				
Name of the Project		: Mining Lease No. 2679				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)				
Particulars of sample collected		: GW1 - Project Site Core Zone Borewell water, GW2 - Ramghad Bore water,				
Issue Date		: 19.03.2025				
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)						
Date of sample collection		14.03.2025	10.03.2025	Desirable Limits	Permissible Limits	Method of Testing
Date of sample receipt		15.03.2025	11.03.2025			
Report No		N036725033	N031525033			
Sl. No.	Sample Code	GW1	GW2			
	Parameters	Results				
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	6.90	7.70	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	1.6	<0.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	180.0	380.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	98.0	206.0	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	5.61	24.80	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	32.00	36.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	0.38	0.85	1	1.5	APHA 23rd Edition 4500F
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	4.00	19.00	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	8.80	10.50	45	45	APHA 23rd Edition 4500B
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	11.80	28.20	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃) mg/l, Max	24.0	98.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as CaCO ₃),mg/l,Max	30.0	140.0	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	10	26	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	<1	<1	--	--	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-2) 2019
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"

BINU MANI

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TEST REPORT

Table No. 17

Name of the Client		: The Sandur Manganese & Iron Ores Limited				
Name of the Project		: Mining Lease No. 2679				
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)				
Particulars of sample collected		: GW3 - Dharmapura Bore water, GW4 - Garaga Bore water,				
Issue Date		: 18.03.2025				
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)						
Date of sample collection		10.03.2025	10.03.2025	Desirable Limits	Permissible Limits	Method of Testing
Date of sample receipt		11.03.2025	11.03.2025			
Report No		N031425033	N031725033			
Sl. No.	Sample Code	GW3	GW4	Results		
	Parameters					
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	7.78	7.40	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022
4	Turbidity,NTU, Max	<0.1	1.1	1	5	IS:3025 (P-10)1984 RA 2017
5	Electrical Conductivity (µmhos/cm)	1300.0	3500.0	--	--	IS 3025 (P-14)
6	Total Dissolved Solids,mg/l, Max	740.0	2000.0	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	100.20	216.40	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	70.00	560.00	250	1000	IS:3025 (P-32) 1988 RA 2019
12	Fluoride (as F),mg/l, Max	0.97	1.12	1	1.5	APHA 23rd Edition 4500F
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	60.70	165.20	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	24.70	44.20	45	45	APHA 23rd Edition 4500B
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	110.00	430.00	200	400	IS:3025 (P-24) Sec 1 2022
19	Alkalinity (as CaCO ₃) mg/l, Max	490.0	520.0	200	600	IS:3025 (P-23):1986 RA 2019
20	Total Hardness (as CaCO ₃),mg/l,Max	500.0	1220.0	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	33	44	--	--	IS:3025 (Part-45) 1993 RA2019
23	Potassium, (as K), mg/l, Max	8	10	--	--	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-2) 2019
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

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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. 2679
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services LLP)
Particulars of sample collected	: GW5 - Yeshwanthnagar Bore water, , GW6 - Subbarayanahalli Bore water
Issue Date	: 18.03.2025
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)	

Date of sample collection			10.03.2025	10.03.2025	Desirable Limts	Permissible Limts	Method of Testing
Date of sample receipt			11.03.2025	11.03.2025			
Report No			N/032825033	N/032725033			
Sl. No.	Sample Code	GW5	GW6				
	Parameters	Results					
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	7.42	8.10	6.5 to 8.5	6.5 - 8.5	IS:3025 (P-11) 2022	
4	Turbidity,NTU, Max	1.5	2.8	1	5	IS:3025 (P-10)1984 RA 2017	
5	Electrical Conductivity (µmhos/cm)	2300.0	310.0	--	--	IS 3025 (P-14)	
6	Total Dissolved Solids,mg/l, Max	1360.0	168.0	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	120.20	16.00	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	330.00	31.00	250	1000	IS:3025 (P-32) 1988 RA 2019	
12	Fluoride (as F),mg/l, Max	0.85	0.56	1	1.5	APHA 23rd Edition 4500F	
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	102.00	17.00	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	43.70	12.70	45	45	APHA 23rd Edition 4500B	
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	150.00	14.50	200	400	IS:3025 (P-24) Sec 1 2022	
19	Alkalinity (as CaCO ₃) mg/l, Max	560.0	104.0	200	600	IS:3025 (P-23):1986 RA 2019	
20	Total Hardness (as CaCO ₃),mg/l,Max	720.0	110.0	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	122	10.2	--	--	IS:3025 (Part-45) 1993 RA2019	
23	Potassium, (as K), mg/l, Max	6.8	4.2	--	--	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-2) 2019	
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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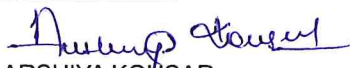
TEST REPORT

Table No: 19

Stack Monitoring Report

Name of the Client : The Sandur Manganese & Iron Ores Limited				
Name of the Mine : RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)				
Location		: Mining Lease No. 2679		
Stack ID & Capacity		: DG Set 35 KVA Ramgad-KK1 Mines		
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)		
Date of Collection		: 14.12.2024		
Instrument used for sampling		: Emissions collected through stack sampler		
Date of Collection		: 15.03.2025		
Date of Sample Receipt		: 17.03.2025		
Report No		: N00825034		
Issue date		: 25.03.2025		
STACK DETAILS				
1	Fuel Used	Diesel		
2	Ambient Temperature (°C)	32		
3	Stack Temperature (°C)	142		
4	Velocity (m/s)	6.74		
5	Stack diameter (M)	0.15		
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	290		
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 due date	15.07.2025		
11	Test Method	IS 11255 & flue gas analyser		
Pollutional Parameters (Result)				
Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.072	<0.2
2	CO	g/Kw-hr	0.093	<3.5
3	Nox +HC	g/Kw-hr	0.186	<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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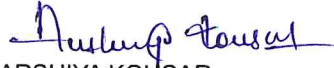
TEST REPORT

Table No. 20

Stack Monitoring Report

Name of the Client : The Sandur Manganese & Iron Ores Limited				
Name of the Mine : RAMGAD MANGANESE & IRON ORE MINE (ML NO. 2679)				
Location		: Mining Lease No. 2679		
Stack ID & Capacity		: DG Set 20 KVA Ramgad Mines		
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)		
Date of Collection		: 14.12.2024		
Instrument used for sampling		: Emissions collected through stack sampler		
Date of Collection		: 15.03.2025		
Date of Sample Receipt		: 17.03.2025		
Report No		: N00925034		
Issue date		: 25.03.2025		
STACK DETAILS				
1	Fuel Used	Diesel		
2	Ambient Temperature (°C)	33		
3	Stack Temperature (°C)	136		
4	Velocity (m/s)	5.73		
5	Stack diameter (M)	0.15		
6	Quantity of flue Gas Discharged into atmosphere (Nm ³ /hr)	250		
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 due date	15.07.2025		
11	Test Method	IS 11255 & flue gas analyser		
Pollutional Parameters (Result)				
Sl.No	Parameters	Unit	Results	Standard
1	Particulate Matter	g/Kw-hr	0.094	<0.2
2	CO	g/Kw-hr	0.140	<3.5
3	Nox +HC	g/Kw-hr	0.280	<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. 21

RESULTS OF RESIPARBLE AIR-BORNE DUST SURVEY

Name of the Owner : Sandur Manganese & Iron Ores Limited

Name of the Mine : Ramgad Manganese & Iron Ore Mine (ML NO. 2679)

Sample Collected by: Mr. L Umesh

Issue Date : 25.03.2025

PERSONAL SAMPLER

SL. NO	DATE OF SAMPLE COLLECTION	Filter paper code	Report No	LOCATION / CATEGORY	Name of the person	DURATION OF SAMPLING			Volume of air (Lts)	DUST CONCENTRATION mg/m ³	*PERMISSIBLE LIMIT mg/m ³
						FROM	TO	TOTAL HRS		RPM	
1	18.03.2025	370	N001025034	Wheel.Loader Operator	Kasim Saab	8:40	16:40	8:00	684.0	1.32	3
2	18.03.2025	371	N001125034	Tipper Operator	Mahesh P	8:30	16:30	8:00	1056.0	1.14	3
3	18.03.2028	369	N001225034	Excavator (Tata Hitachi 200 Lc)	Durgappa	8:45	16:45	8:00	684.0	1.46	3
4	18.03.2025	368	N001325034	Drilling Operator	Thippeswamy	8:50	16:50	8:00	1056.0	1.52	3

STATIC SAMPLER

SL. NO	DATE OF SAMPLE COLLECTION	Filter paper code	Report No	LOCATION / CATEGORY	Name of the person	DURATION OF SAMPLING			Volume of air (Lts)	DUST CONCENTRATION mg/m ³	*PERMISSIBLE LIMIT mg/m ³
						FROM	TO	TOTAL HRS		RPM	
5	18.03.2025	367	N001425034	Haulage road	Static	9:00	17:00	8:00	940.8	2.02	3
6	18.03.2025	366	N001525034	Stack Yard	Static	9:10	17:10	8:00	796.8	1.26	3

*Note: Free Silica Analysis report for Ragmad Manganese & Iron Ore mine show less than 5% Free silica content and hence the permissible limit for dust concentration shall be 3 mg/m³ (Ref : DGMS Reg 124(2) of MMR,1961)

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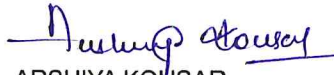
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TEST REPORT

Table No. 22

Free Silica Analysis Report

Name of the Owner : Sandur Manganese & Iron Ores Limited					
Name of the Mine : Ramgad Manganese & Iron Ore Mine (ML NO. 2679)					
Sample Collected by: Mr. L Umesh					
Issue Date : 25.03.2025					
SL.NO	DATE OF SAMPLE COLLECTION	LOCATION / CATEGORY	Name of the person / Static	Free Silica Content (%)	Free Silica Limits (%)
<u>PERSONAL SAMPLER</u>					
1	18.03.2025	Wheel.Loader Operator	Kasim Saab	ND	5
2	18.03.2025	Tipper Operator	Mahesh P	ND	5
3	18.03.2028	Excavator (Tata Hitachi 200 Lc)	Durgappa	ND	5
4	18.03.2025	Drilling Operator	Thippewamy	ND	5
<u>STATIC SAMPLER</u>					
5	18.03.2025	Haulage road	Static	ND	5
6	18.03.2025	Stack Yard	Static	ND	5
Note: ND-Not Detected, Detection Level : 0.0005%					


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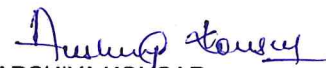
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TEST REPORT

Table No. 23

Name of the Client		: M/s. Sandur Manganese & Iron Ores Limited			
Name of the Project		: Mining Lease No. 2679			
Particulars of sample		: Soil Samples			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)			
Date of sample collection		: 14.03.2025			
Date of sample receipt		: 15.03.2025			
Issue Date		: 01.04.2024			
Report No		N036825033		N036925033	
Report No		N037025033			
SL. No.	Sample Code	S1	S2	S3	
	PARAMETERS	Unit	Results		
PHYSICAL PROPERTIES					
1	Colour	--	Red soil	Red soil	Red Soil
2	Textural class	--	Clay Loam	Clay Loam	Sandy Loam
3	Size Distribution				
	Sand	%	34.21	33.25	39.21
	Clay	%	30.35	28.23	32.12
	Silt	%	35.44	38.52	28.67
4	Moisture Content	%	6.15	6.96	6.72
5	Bulk Density	gm/cc	1.88	1.82	1.96
6	Water holding capacity	%	30.22	28.96	44.25
7	pH	--	6.12	7.41	7.55
8	EC	m.mohs/cm	0.272	0.121	0.677
Chemical Properties					
9	Organic Carbon	%	0.33	0.81	0.82
10	Nitrogen as N	Kg/Ha	186	163	141
11	Phosphorous as P	Kg/Ha	7.55	7.68	38
12	Potassium as K ₂ O	Kg/Ha	161	121	139
13	Sodium as Na	mg/kg	30	52	30
14	Chloride as Cl	mg/kg	236	136	36
15	Sulphate as SO ₄	mg/kg	120	33	30
Sample Locations :					
S1 - Core Zone (ML Area)					
S2 - Ramghad agriculture land					
S3 - Dharmapura agriculture land					


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TEST REPORT

Table No. 24

Name of the Client		: M/s. Sandur Manganese & Iron Ores Limited			
Name of the Project		: Mining Lease No. 2679			
Particulars of sample		: Soil Samples			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services)			
Date of sample collection		: 14.03.2025			
Date of sample receipt		: 15.03.2025			
Issue Date		: 01.04.2024			
Report No		N037125033		N039225033	
Report No		N037125033		N039225033	
SL. No.	Sample Code	S4		S5	
PARAMETERS	Unit	Results			
PHYSICAL PROPERTIES					
1	Colour	--	Red Soil	Red soil	Red Soil
2	Textural class	--	Sandy Loam	Clay Loam	Clay Loam
Size Distribution					
3	Sand	%	38.64	38.44	32.45
	Clay	%	28.44	31.33	28.12
	Silt	%	32.92	30.23	39.43
4	Moisture Content	%	7.36	6.95	7.66
5	Bulk Density	gm/cc	1.52	7.82	1.78
6	Water holding capacity	%	42.11	40.88	24.61
7	pH	--	7.62	7.16	7.69
8	EC	m.mohs/cm	0.338	0.578	0.235
Chemical Properties					
9	Organic Carbon	%	0.62	0.50	0.31
10	Nitrogen as N	Kg/Ha	132	138	136
11	Phosphorous as P	Kg/Ha	40	42	7.66
12	Potassium as K ₂ O	Kg/Ha	133	139	125
13	Sodium as Na	mg/kg	26	31	41
14	Chloride as Cl	mg/kg	30	32	147
15	Sulphate as SO ₄	mg/kg	33	36	28
Sample Locations :					
S4 - Garaga agriculture land					
S5 - Yeshwanthnagar agriculture land					
S6 - Subbarayanahalli agriculture land					

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