

ENVIRONMENTAL MONITORING REPORT

February, 2025

Project : Dharmapura Iron Ore Mine

(ML No.2543)

**R.M. Block, Ramgad Range, Dharmapura village,
Sandur Taluk, Ballari Dist., Karnataka.**

Lessee

M/s. VNK Menon

**No. 6, KHB colony Sandur,
Ballari District, Karnataka**

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 LLP)

Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory

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	: M/s. V.N.K. Menon
Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)
Sample Collected by	: Environmental Laboratory (Unit of Mineral Engineering Services LLP)
Station at & Code	: A - I, Core Zone (ML Area)
Duration	: 24 Hrs
Issue date	: 03.03.2025
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	
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)
03.02.2025	N/25/02/1-0125	9	12	54	27
04.02.2025	N/25/02/1-0172	11	15	57	29
12.02.2025	N/25/02/3-0147	12	16	46	25
13.02.2025	N/25/02/3-0195	11	13	40	22
19.02.2025	N/25/02/5-0093	9	11	50	29
20.02.2025	N/25/02/5-0126	12	15	59	33
24.02.2025	N/25/02/5-0354	10	12	53	28
25.02.2025	N/25/02/5-0463	12	18	45	25
Limits for Industrial ,		80	80	100	60
Residential, Rural and other Areas		24 Hrs	24 Hrs	24 Hrs	24 Hrs

M. SACHIN RAJU
M.SACHIN RAJU

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. 2

AMBIENT AIR QUALITY

Name of the Client : M/s. V.N.K. Menon
 Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A - II, Dharmapura
 Duration : 24 Hrs
 Issue date : 03.03.2025
 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	
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)
03.02.2025	N/25/02/1-0120	11	14	56	30
04.02.2025	N/25/02/1-0167	9	10	50	26
14.02.2025	N/25/02/3-0207	9	11	54	28
15.02.2025	N/25/02/3-0255	8	14	46	25
17.02.2025	N/25/02/5-0022	12	13	30	22
18.02.2025	N/25/02/5-0058	11	15	44	25
26.02.2025	N/25/03/1-0007	10	14	50	29
27.02.2025	N/25/03/1-0030	11	18	55	30
Limits for Industrial ,		80	80	100	60
Residential, Rural and other Areas		24 Hrs	24 Hrs	24 Hrs	24 Hrs

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Table No. 3

AMBIENT AIR QUALITY

Name of the Client : M/s. V.N.K. Menon
 Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A - III, Yeshwanthanagar
 Duration : 24 Hrs
 Issue date : 03.03.2025
 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	
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)
03.02.2025	N/25/02/1-0108	11	15	52	28
04.02.2025	N/25/02/1-0156	12	18	48	25
10.02.2025	N/25/02/3-0018	12	13	50	29
11.02.2025	N/25/02/3-0084	10	17	55	30
21.02.2025	N/25/02/5-0158	9	13	46	27
22.02.2025	N/25/02/5-0246	11	18	57	29
24.02.2025	N/25/02/5-0341	12	13	44	23
25.02.2025	N/25/02/5-0455	10	11	52	27
Limits for Industrial ,		80	80	100	60
Residential, Rural and other Areas		24 Hrs	24 Hrs	24 Hrs	24 Hrs

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Table No. 4

AMBIENT AIR QUALITY

Name of the Client : M/s. V.N.K. Menon
 Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
 Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)
 Station at & Code : A - IV Ramgad
 Duration : 24 Hrs
 Issue date : 03.03.2025
 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	
				PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)
03.02.2025	N/25/02/1-0119	11	16	46	23
04.02.2025	N/25/02/1-0166	13	15	53	28
14.02.2025	N/25/02/3-0206	10	13	55	30
15.02.2025	N/25/02/3-0254	7	12	47	25
17.02.2025	N/25/02/5-0021	13	15	50	26
18.02.2025	N/25/02/5-0057	8	11	49	34
26.02.2025	N/25/03/1-0006	12	16	53	27
27.02.2025	N/25/03/1-0029	10	18	58	30
Limits for Industrial ,		80	80	100	60
Residential, Rural and other Areas		24 Hrs	24 Hrs	24 Hrs	24 Hrs

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TEST REPORT

Table No. 5

Fugitive Emission

Name of the Client : M/s. V.N.K. Menon		
Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)		
Sample Collected by : Environmental Laboratory (Unit of Mineral Engineering Services LLP)		
Station at & Code : A - VI, Loading point		
Duration : 08 Hrs		
Issue date : 03.03.2025		
Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
12.02.2025	N/25/02/3-0148	296
19.02.2025	N/25/02/5-0094	375

Station at & Code : A - VII, Dumping point		
Duration : 08 Hrs		
Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
13.02.2025	N/25/02/3-0174	387
20.02.2025	N/25/02/5-0127	366

Station at & Code : A - VIII, Haulage Road		
Duration : 08 Hrs		
Date of sample	Lab Code	Particulate mater ($\mu\text{g}/\text{m}^3$)
12.02.2025	N/25/02/3-0149	423
19.02.2025	N/25/02/5-0095	397
Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment) & Lab SOP		
Permissible limits for Fugitive Emissions		Particulate mater ($\mu\text{g}/\text{m}^3$) 600 $\mu\text{g}/\text{m}^3$

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TEST REPORT

Table No. 6

STATISTICAL AMBIENT AIR QUALITY DATA

Name of the Project : Dharmapura Iron Ore Mine (ML No. 2543)								
Name of the Client : M/s. V.N.K. Menon								
Month : February, 2025								
Station Code : A I - Core Zone (Mine office)					A II - Dharmapura village			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Min.	9	11	40	22	8	10	30	22
10%	9	12	44	24	9	11	40	24
25%	10	12	46	25	9	13	46	25
50%	11	14	52	28	11	14	50	27
75%	12	15	55	29	11	14	54	29
98%	12	18	59	32	12	18	56	30
Max.	12	18	59	33	12	18	56	30
Avg.	11	14	51	27	10	14	48	27
SD	1	2	6	3	1	2	8	3
No. of obs	8				8			
Station Code : A III - Yeshwanthanagar					A - IV Ramgad			
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	PM ₁₀	PM _{2.5}
Min.	9	11	44	23	7	11	46	23
10%	10	12	45	24	8	12	47	24
25%	10	13	48	27	10	13	49	26
50%	11	14	51	28	11	15	52	28
75%	12	17	53	29	12	16	54	30
98%	12	18	57	30	13	18	58	33
Max.	12	18	57	30	13	18	58	34
Avg.	11	15	51	27	11	15	51	28
SD	1	3	4	2	2	2	4	3
No. of obs	8				8			

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TEST REPORT

Table No.7

Name of the Client		: M/s. V.N.K. Menon			
Name of the Project		: Dharmapura Iron Ore Mine (ML No. 2543)			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)			
Particulars of sample collected		: SW1 - Ragavapura kere water SW2 - Dhananayakana kere water			
Date of sample collection		: 12.02.2025			
Issue Date		: 25.02.2025			
Ref : IS : 2296 Water Quality Standards					
Lab Code		N/25/02/3-0406	N/25/02/3-0407	Limits For Stream Water Standards	Method of Testing
Sl.No.	Parameters	SW1	SW2		
		Results			
1	Colour (Hazen Units)	5	10	300	IS:3025(Part-4)2021
2	pH	8.30	8.10	6.5 to 8.5	IS:3025(Part-11)2022
3	Dissolved Oxygen (as O ₂), mg/l	5.5	5.3	Min 4	IS:3025(Part-38)1989RA 2019
4	Biochemical Oxygen Demand (as O ₂), mg/l	<3	<3	3	IS:3025(P-44) 2014
5	Total Coliform (MPN/100ml)	230	220	5000	IS:1622:1981
6	Total Dissolved Solids, (mg/l)	162	290	1500	IS:3025(Part-16)2023
7	Oil & Greease, mg/l	<0.1	<0.1	0.1	IS:3025(Part 39)2021
8	Chloride (as Cl),mg/l	20.0	55	600	IS:3025(Part-32) ;1988RA2019
9	Sulphates as SO ₄ (mg/l)	32.0	40.5	400	IS:3025(P-24)Sec 1 2022
10	Nitrates (as NO ₃),mg/l	11.80	15.72	50	IS:3025(Part-34)1988 RA 2019
11	Fluoride (as F),mg/l	0.64	0.68	1.5	APHA 23rd Edition 4500F
12	Copper (as Cu),mg/l	<0.005	<0.005	1.5	IS:3025(Part-2) 2019
13	Iron (as Fe),mg/l	<0.005	<0.005	50	IS:3025(P-2) 2019
14	Zinc (as Zn),mg/l	<0.005	<0.005	15	IS:3025(P-2) 2019
15	Total Arsenic (as As), (mg/l)	<0.002	<0.002	0.2	IS:3025(Part-37)
16	Lead (as Pb), mg/l	<0.005	<0.005	0.1	IS:3025(P-2) 2019
17	Cadmium (as Cd), mg/l	<0.001	<0.001	0.01	IS:3025(P-2) 2019
18	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.03	<0.03	0.05	IS:3025(P-52) 2014
19	Selenium (as Se), mg/l	<0.005	<0.005	0.05	IS:3025(P-2) 2019
20	Cyanide (as CN), mg/l	<0.005	<0.005	0.05	IS:3025(P-27) Sec 1 2021
21	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001	<0.001	0.005	IS:3025(P-43)Sec 1 2022
22	Anionic detergents (as MBAS),mg/l	<0.1	<0.1	1.0	IS:3025(Part-68)

""END OF REPORT""



BINU MANI

T.M. - Microbiology

Govt. Analyst / Authorised Signatory



ARSHIYA KOUSAR

Dy. T.M. - Chemical

Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No. 8

Name of the Client		: M/s. V.N.K. Menon			
Name of the Project		: Dharmapura Iron Ore Mine (ML No. 2543)			
Particulars of sample		: Soil Samples			
Sample Collected by		: Environmental Laboratory (Unit of Mineral Engineering Services LLP)			
Date of sample collection		: 10.02.2025			
Issue Date		: 04.03.2025			
Sl. No.	Lab Code		N/25/02/3-0412	N/25/02/3-0413	N/25/02/3-0414
	Sample Code		S1	S2	S3
	PARAMETERS	Unit	Results		
PHYSICAL PROPERTIES					
1	Colour	--	Red Soil	Red Soil	Red soil
2	Textural class	--	CLAY LOAM	LOAM	Clay Loam
3	Size Distribution				
	Sand	%	36.20	45.30	38.42
	Clay	%	30.30	22.66	31.25
	Silt	%	33.60	32.04	30.33
4	Moisture Content	%	10.62	10.55	11.38
5	Bulk Density	gm/cc	1.83	1.35	1.61
6	Water holding capacity	%	23.60	30.26	41.25
7	pH	--	6.88	6.75	6.89
8	EC	m.mohs/cm	0.563	0.480	0.582
Chemical Properties					
9	Organic Carbon	%	0.38	0.81	0.52
10	Nitrogen as N	Kg/Ha	255	215	277
11	Phosphorous as P	Kg/Ha	11.28	11.28	9.86
12	Potassium as K ₂ O	Kg/Ha	124	140	140
13	Sodium as Na	mg/kg	46.00	39.00	30.00
14	Chloride as Cl	mg/kg	34.00	38.00	36.00
15	Sulphate as SO ₄	mg/kg	38.00	48.00	38.00
Sample Locations :					
S1 - Dump soil (ML area)					
S2 - Dharmapura Agricultural land					
S3 - Yeshwanthanagar Aricultural land					

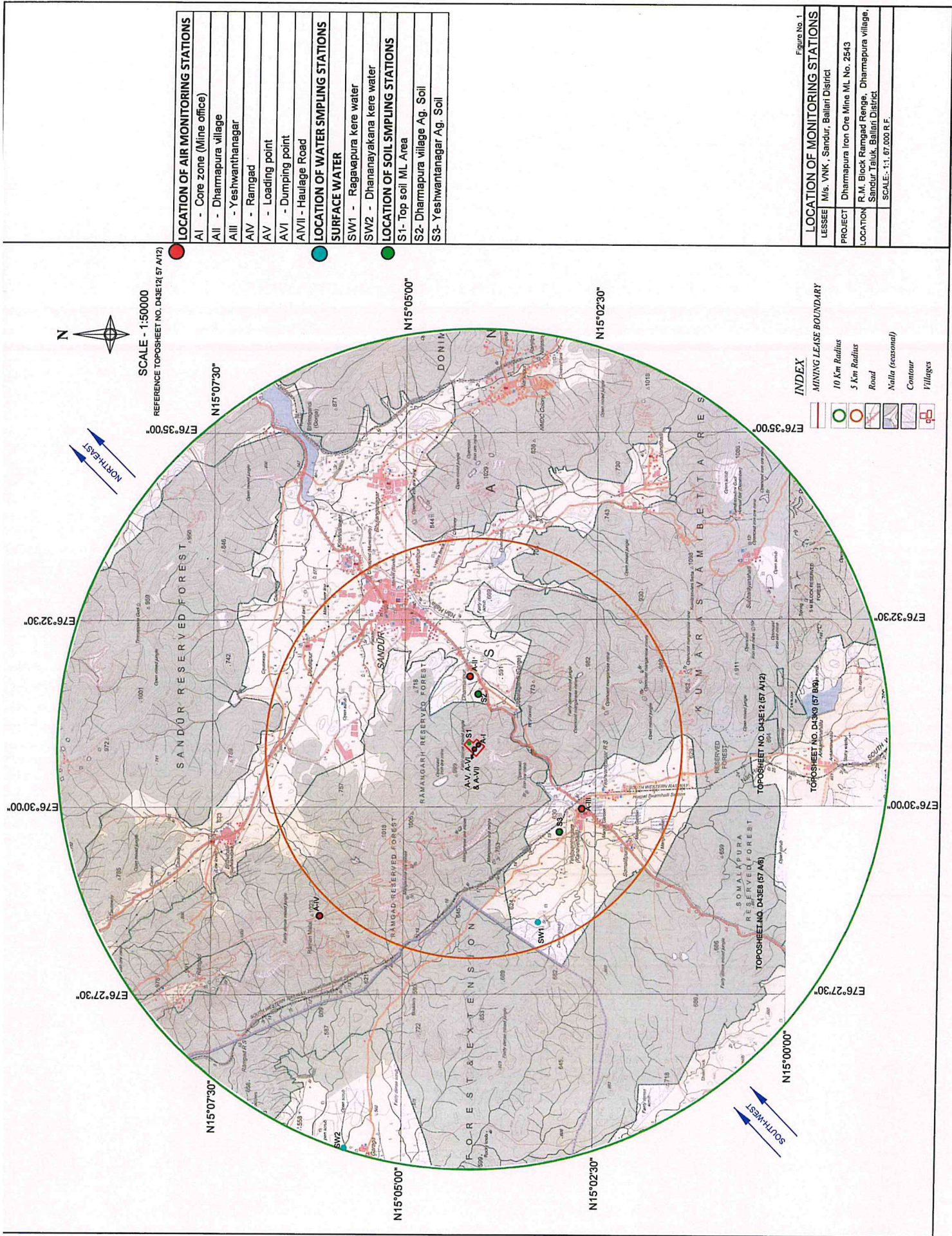
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LOCATION OF AIR MONITORING STATIONS	
AI	- Core zone (Mine office)
AII	- Dharmapura village
AIII	- Yeshwanthanagar
AV	- Ramgad
AVI	- Loading point
AVII	- Dumping point
AVII	- Haulage Road
LOCATION OF WATER SMPLNG STATIONS	
SURFACE WATER	
SW1	- Ragavapura kere water
SW2	- Dhanayakana kere water
LOCATION OF SOIL SMPLNG STATIONS	
S1	- Top soil ML Area
S2	- Dharmapura village Ag. Soil
S3	- Yeshwanthanagar Ag. Soil

LOCATION OF MONITORING STATIONS	
LESSEE	M/s. VNK, Sandur, Ballari District
PROJECT	Dharmapura Iron Ore Mine ML No. 2543
LOCATION	R.M. Block Ramgad Renge, Dharmapura village, Sandur Taluk, Ballari District
SCALE - 1:1,67,000 R.F.	

INDEX

MINING LEASE BOUNDARY

10 Km Radius

5 Km Radius

Road

Nalla (seasonal)

Contour

Villages

SCALE - 1:50000
REFERENCE TOPOSHEET NO. D43E12 (57 A12)

TOPOSHEET NO. D43E12 (57 A12)

TOPOSHEET NO. D43K0 (57 B49)

TOPOSHEET NO. D43E8 (57 A48)