

ENVIRONMENTAL MONITORING REPORT

July to September, 2021

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**

CONSULTANT

MINERAL ENGINEERING SERVICES

Mining & Environmental Engineers
(Recognised Environmental Laboratory by MoEF)
25/XXV, Club Road, BALLARI - 583 103.

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No. S.O. 857 (E) dated 26.02.2018. Recognition valid upto 25.02.2023



ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 1

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client : M/s. V.N.K. Menon
Station at & Code : A - I, Core Zone (ML Area)
Duration : 24 Hrs
Date of Report : 07.08.2021
Reference IS 5182 Report No : MES/MS/ARN/260

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
05.07.2021	9	11	38	21	<20	<1
06.07.2021	6	9	30	19	<20	<1
14.07.2021	7	9	42	25	<20	<1
15.07.2021	9	12	43	25	<20	<1
21.07.2021	12	11	30	17	<20	<1
22.07.2021	9	10	28	16	<20	<1
30.07.2021	4	9	42	20	<20	<1
31.07.2021	9	10	35	17	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
05.07.2021	0.16	<0.5	<0.5	<0.5	0.08	22
06.07.2021	0.05	<0.5	<0.5	<0.5	0.06	21
14.07.2021	0.11	<0.5	<0.5	<0.5	0.13	23
15.07.2021	0.07	<0.5	<0.5	<0.5	0.05	21
21.07.2021	0.09	<0.5	<0.5	<0.5	0.11	20
22.07.2021	0.05	<0.5	<0.5	<0.5	0.08	<20
30.07.2021	0.07	<0.5	<0.5	<0.5	0.05	20
31.07.2021	0.11	<0.5	<0.5	<0.5	0.06	21
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 2

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - II, Dharmapura					
Duration	: 24 Hrs					
Date of Report	: 07.08.2021					
Reference IS 5182	Report No : MES/MS/ARN/252					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
05.07.2021	11	13	38	20	<20	<1
06.07.2021	8	9	40	22	<20	<1
14.07.2021	9	10	39	22	<20	<1
15.07.2021	9	11	30	27	<20	<1
21.07.2021	6	9	33	25	<20	<1
22.07.2021	7	8	41	26	<20	<1
30.07.2021	5	9	35	27	<20	<1
31.07.2021	9	11	37	29	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
05.07.2021	0.11	<0.5	<0.5	<0.5	0.11	20
06.07.2021	0.16	<0.5	<0.5	<0.5	0.05	23
14.07.2021	0.06	<0.5	<0.5	<0.5	0.16	<20
15.07.2021	0.05	<0.5	<0.5	<0.5	0.15	22
21.07.2021	<0.05	<0.5	<0.5	<0.5	<0.05	20
22.07.2021	0.06	<0.5	<0.5	<0.5	0.08	22
30.07.2021	0.05	<0.5	<0.5	<0.5	0.14	21
31.07.2021	0.11	<0.5	<0.5	<0.5	0.05	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 3

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client	: M/s. V.N.K. Menon
Station at & Code	: A - III, Yeshwanthanagar
Duration	: 24 Hrs
Date of Report	: 07.08.2021
Reference IS 5182	Report No : MES/MS/ARN/253

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
05.07.2021	11	13	36	23	<20	<1
06.07.2021	7	9	32	31	<20	<1
14.07.2021	9	12	41	25	<20	<1
15.07.2021	7	10	30	20	<20	<1
21.07.2021	9	11	45	26	<20	<1
22.07.2021	10	12	35	24	<20	<1
30.07.2021	11	13	39	20	<20	<1
31.07.2021	10	11	50	27	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
05.07.2021	0.13	<0.5	<0.5	<0.5	0.08	21
06.07.2021	0.13	<0.5	<0.5	<0.5	0.43	26
14.07.2021	0.04	<0.5	<0.5	<0.5	0.06	23
15.07.2021	0.05	<0.5	<0.5	<0.5	0.16	21
21.07.2021	0.15	<0.5	<0.5	<0.5	0.34	23
22.07.2021	0.06	<0.5	<0.5	<0.5	0.07	23
30.07.2021	0.06	<0.5	<0.5	<0.5	0.26	24
31.07.2021	0.15	<0.5	<0.5	<0.5	0.16	25
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 4

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - IV Ramgad					
Duration	: 24 Hrs					
Date of Report	: 07.08.2021					
Reference IS 5182	Report No : MES/MS/ARN/272					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
09.07.2021	11	15	46	22	<20	<1
10.07.2021	9	10	38	19	<20	<1
12.07.2021	9	11	30	17	<20	<1
13.07.2021	6	9	47	22	<20	<1
23.07.2021	7	8	48	26	<20	<1
24.07.2021	11	12	50	27	<20	<1
30.07.2021	9	9	39	22	<20	<1
31.07.2021	7	10	34	15	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
09.07.2021	0.09	<0.5	<0.5	<0.5	0.07	20
10.07.2021	<0.05	<0.5	<0.5	<0.5	0.11	23
12.07.2021	0.05	<0.5	<0.5	<0.5	0.05	25
13.07.2021	0.11	<0.5	<0.5	<0.5	0.15	24
23.07.2021	0.09	<0.5	<0.5	<0.5	0.11	20
24.07.2021	0.05	<0.5	<0.5	<0.5	0.06	26
30.07.2021	0.16	<0.5	<0.5	<0.5	0.05	24
31.07.2021	0.13	<0.5	<0.5	<0.5	0.24	28
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr


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Table No. 5

Analysis Report of Fugitive Emission

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client	: M/s. V.N.K. Menon
Station at & Code	: A - VI, Loading point
Duration	: 08 Hrs
Date of Report	: 07.08.2021
Report No	: MES/MS/ARN/261
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
15.07.2021	263
22.07.2021	215

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 07.08.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
14.07.2021	256
21.07.2021	244

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 07.08.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
14.07.2021	318
22.07.2021	309
Ref	: Environmental (Protection) Rules, 2010 (Sixth Amendment)
	Particulate mater ($\mu\text{g}/\text{m}^3$)
Permissible limits for Fugitive Emissions	1200 $\mu\text{g}/\text{m}^3$


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Table No. 6

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
 Name of the Client : M/s. V.N.K. Menon
 Station at & Code : A - I, Core Zone (ML Area)
 Duration : 24 Hrs
 Date of Report : 07.09.2021
 Reference IS 5182

Report No : MES/MS/ARN/462

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.08.2021	8	13	38	17	<20	<1
05.08.2021	10	12	44	18	<20	<1
11.08.2021	9	11	42	16	<20	<1
12.08.2021	7	9	43	17	<20	<1
16.08.2021	8	11	39	18	<20	<1
17.08.2021	10	10	45	20	<20	<1
25.08.2021	7	12	38	18	<20	<1
26.08.2021	8	13	42	17	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.08.2021	0.08	<0.5	<0.5	<0.5	0.18	24
05.08.2021	0.07	<0.5	<0.5	<0.5	0.22	26
11.08.2021	0.08	<0.5	<0.5	<0.5	0.23	25
12.08.2021	0.07	<0.5	<0.5	<0.5	0.25	27
16.08.2021	0.06	<0.5	<0.5	<0.5	0.22	28
17.08.2021	0.07	<0.5	<0.5	<0.5	0.23	24
25.08.2021	0.08	<0.5	<0.5	<0.5	0.21	29
26.08.2021	0.07	<0.5	<0.5	<0.5	0.24	26
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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OHSAS (ISO 45001:2018)

Table No. 7

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - II, Dharmapura					
Duration	: 24 Hrs					
Date of Report	: 07.09.2021					
Reference IS 5182	Report No : MES/MS/ARN/436					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.08.2021	9	9	36	17	<20	<1
05.08.2021	8	10	31	15	<20	<1
11.08.2021	10	11	29	16	<20	<1
12.08.2021	7	9	35	18	<20	<1
16.08.2021	10	10	38	17	<20	<1
17.08.2021	9	12	34	18	<20	<1
25.08.2021	8	11	30	15	<20	<1
26.08.2021	6	9	29	16	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.08.2021	0.06	<0.5	<0.5	<0.5	0.15	26
05.08.2021	0.07	<0.5	<0.5	<0.5	0.17	25
11.08.2021	0.09	<0.5	<0.5	<0.5	0.20	21
12.08.2021	0.07	<0.5	<0.5	<0.5	0.19	26
16.08.2021	0.05	<0.5	<0.5	<0.5	0.18	23
17.08.2021	0.08	<0.5	<0.5	<0.5	0.19	24
25.08.2021	0.06	<0.5	<0.5	<0.5	0.24	21
26.08.2021	0.05	<0.5	<0.5	<0.5	0.25	28
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr


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OHSAS (ISO 45001:2018)

Table No. 8

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - III, Yeshwanthanagar					
Duration	: 24 Hrs					
Date of Report	: 07.09.2021					
Reference IS 5182	Report No : MES/MS/ARN/437					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
04.08.2021	4	11	28	20	<20	<1
05.08.2021	7	10	35	16	<20	<1
11.08.2021	7	9	34	17	<20	<1
12.08.2021	6	12	37	15	<20	<1
16.08.2021	7	9	48	23	<20	<1
17.08.2021	8	11	40	22	<20	<1
25.08.2021	6	10	35	19	<20	<1
26.08.2021	5	9	38	17	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
04.08.2021	0.09	<0.5	<0.5	<0.5	0.21	26
05.08.2021	0.10	<0.5	<0.5	<0.5	0.16	27
11.08.2021	0.09	<0.5	<0.5	<0.5	0.19	25
12.08.2021	0.08	<0.5	<0.5	<0.5	0.22	21
16.08.2021	0.08	<0.5	<0.5	<0.5	0.15	24
17.08.2021	0.06	<0.5	<0.5	<0.5	0.19	25
25.08.2021	0.07	<0.5	<0.5	<0.5	0.16	26
26.08.2021	0.08	<0.5	<0.5	<0.5	0.17	21
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 9

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client : M/s. V.N.K. Menon
Station at & Code : A - IV Ramgad
Duration : 24 Hrs
Date of Report : 07.09.2021
Reference IS 5182 Report No : MES/MS/ARN/454

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
02.08.2021	7	9	30	16	<20	<1
03.08.2021	8	11	32	18	<20	<1
13.08.2021	9	10	36	17	<20	<1
14.08.2021	5	9	34	18	<20	<1
20.08.2021	6	10	31	17	<20	<1
21.08.2021	4	9	28	16	<20	<1
27.08.2021	8	12	41	20	<20	<1
28.08.2021	7	10	37	15	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
02.08.2021	0.08	<0.5	<0.5	<0.5	0.18	25
03.08.2021	0.09	<0.5	<0.5	<0.5	0.20	21
13.08.2021	0.06	<0.5	<0.5	<0.5	0.21	26
14.08.2021	0.07	<0.5	<0.5	<0.5	0.17	24
20.08.2021	0.05	<0.5	<0.5	<0.5	0.22	21
21.08.2021	0.06	<0.5	<0.5	<0.5	0.21	23
27.08.2021	0.05	<0.5	<0.5	<0.5	0.18	27
28.08.2021	0.90	<0.5	<0.5	<0.5	0.20	25
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 10

Analysis Report of Fugitive Emission

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client	: M/s. V.N.K. Menon
Station at & Code	: A - VI, Loading point
Duration	: 08 Hrs
Date of Report	: 07.09.2021
Report No	: MES/MS/ARN/463
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
05.08.2021	287
12.08.2021	364

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 07.09.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
04.08.2021	232
11.08.2021	415

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 07.09.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
05.08.2021	384
12.08.2021	485
Ref	: Environmental (Protection) Rules, 2010 (Sixth Amendment)
	Particulate mater ($\mu\text{g}/\text{m}^3$)
Permissible limits for Fugitive Emissions	1200 $\mu\text{g}/\text{m}^3$


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 11

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - I, Core Zone (ML Area)					
Duration	: 24 Hrs					
Date of Report	: 05.10.2021					
Reference IS 5182	Report No : MES/PMS/ARN/25					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2021	8	11	37	18	<20	<1
09.09.2021	6	12	45	25	<20	<1
15.09.2021	9	9	35	21	<20	<1
16.09.2021	7	11	49	27	<20	<1
22.09.2021	11	13	36	17	<20	<1
23.09.2021	8	10	40	25	<20	<1
29.09.2021	10	11	52	33	<20	<1
30.09.2021	12	12	47	28	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2021	0.14	<0.5	<0.5	<0.5	0.24	21
09.09.2021	0.10	<0.5	<0.5	<0.5	0.12	24
15.09.2021	0.12	<0.5	<0.5	<0.5	0.14	20
16.09.2021	0.05	<0.5	<0.5	<0.5	0.15	22
22.09.2021	0.09	<0.5	<0.5	<0.5	0.18	20
23.09.2021	0.05	<0.5	<0.5	<0.5	0.25	21
29.09.2021	0.11	<0.5	<0.5	<0.5	0.30	20
30.09.2021	0.07	<0.5	<0.5	<0.5	0.25	23
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 12

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - II, Dharmapura					
Duration	: 24 Hrs					
Date of Report	: 05.10.2021					
Reference IS 5182	Report No : MES/PMS/ARN/16					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
06.09.2021	9	10	45	20	<20	<1
07.09.2021	8	9	41	21	<20	<1
15.09.2021	7	11	43	24	<20	<1
16.09.2021	7	11	40	28	<20	<1
22.09.2021	10	9	35	29	<20	<1
23.09.2021	12	10	34	16	<20	<1
29.09.2021	8	13	30	18	<20	<1
30.09.2021	5	12	31	29	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
06.09.2021	0.09	<0.5	<0.5	<0.5	0.32	28
07.09.2021	0.12	<0.5	<0.5	<0.5	0.32	25
15.09.2021	0.12	<0.5	<0.5	<0.5	0.35	28
16.09.2021	0.13	<0.5	<0.5	<0.5	0.33	24
22.09.2021	0.09	<0.5	<0.5	<0.5	0.32	25
23.09.2021	0.15	<0.5	<0.5	<0.5	0.24	27
29.09.2021	0.14	<0.5	<0.5	<0.5	0.24	23
30.09.2021	0.12	<0.5	<0.5	<0.5	0.34	24
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 13

TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project : Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client : M/s. V.N.K. Menon
Station at & Code : A - III, Yeshwanthanagar
Duration : 24 Hrs
Date of Report : 05.10.2021
Reference IS 5182 Report No : MES/PMS/ARN/17

Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
06.09.2021	11	10	30	22	<20	<1
07.09.2021	10	10	31	21	<20	<1
15.09.2021	12	9	41	24	<20	<1
16.09.2021	7	12	35	25	<20	<1
22.09.2021	9	11	33	27	<20	<1
23.09.2021	10	13	38	30	<20	<1
29.09.2021	12	13	36	18	<20	<1
30.09.2021	11	11	43	21	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
06.09.2021	0.13	<0.5	<0.5	<0.5	0.12	25
07.09.2021	0.14	<0.5	<0.5	<0.5	0.18	24
15.09.2021	0.15	<0.5	<0.5	<0.5	0.17	26
16.09.2021	0.09	<0.5	<0.5	<0.5	0.19	23
22.09.2021	0.12	<0.5	<0.5	<0.5	0.20	25
23.09.2021	0.14	<0.5	<0.5	<0.5	0.25	22
29.09.2021	0.15	<0.5	<0.5	<0.5	0.34	21
30.09.2021	0.13	<0.5	<0.5	<0.5	0.24	20
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr

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Table No. 14

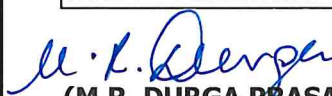
TEST REPORT OF AMBIENT AIR QUALITY

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)					
Name of the Client	: M/s. V.N.K. Menon					
Station at & Code	: A - IV Ramgad					
Duration	: 24 Hrs					
Date of Report	: 05.10.2021					
Reference IS 5182	Report No : MES/PMS/ARN/27					
Date of Sampling	Sulphur Dioxide (SO ₂), µg/m ³	Nitrogen Dioxide (NO ₂), µg/m ³	PM ₁₀ , (µg/m ³)	PM _{2.5} , (µg/m ³)	Ammonia (NH ₃), µg/m ³	Benzene (C ₆ H ₆), µg/m ³
08.09.2021	7	11	39	16	<20	<1
09.09.2021	6	9	32	22	<20	<1
13.09.2021	7	9	45	20	<20	<1
14.09.2021	8	9	41	22	<20	<1
23.09.2021	11	12	37	19	<20	<1
24.09.2021	10	10	31	24	<20	<1
27.09.2021	9	9	42	28	<20	<1
28.09.2021	9	13	45	26	<20	<1
Limits for Industrial , Residential, Rural and other Areas	80 24 Hrs	80 24 Hrs	100 24 Hrs	60 24 Hrs	400 24 Hrs	5 Annual

Date of Sampling	Lead (Pb), µg/m ³	Nickel (Ni), ng/m ³	Arsenic (As), ng/m ³	Benzo(a) Pyrene (BaP), ng/m ³	Carbon Monoxide* (CO), mg/m ³	Ozone* (O ₃), µg/m ³
08.09.2021	0.14	<0.5	<0.5	<0.5	0.08	26
09.09.2021	0.10	<0.5	<0.5	<0.5	0.19	23
13.09.2021	0.13	<0.5	<0.5	<0.5	0.06	21
14.09.2021	0.05	<0.5	<0.5	<0.5	0.23	20
23.09.2021	0.15	<0.5	<0.5	<0.5	0.31	22
24.09.2021	0.11	<0.5	<0.5	<0.5	0.35	27
27.09.2021	0.10	<0.5	<0.5	<0.5	0.20	26
28.09.2021	0.09	<0.5	<0.5	<0.5	0.26	25
Limits for Industrial , Residential, Rural and other Areas	1.0 24 Hrs	20 Annual	6 Annual	1 Annual	4 1 Hr	180 1 Hr

Note : * Parameters monitored for period of 1 hr


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 15

Analysis Report of Fugitive Emission

MES/AQ/TR/06/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No.2543)
Name of the Client	: M/s. V.N.K. Menon
Station at & Code	: A - VI, Loading point
Duration	: 08 Hrs
Date of Report	: 05.10.2021
Report No	: MES/PMS/ARN/26
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
09.09.2021	386
16.09.2021	267

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 05.10.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
08.09.2021	436
15.09.2021	345

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 05.10.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
08.09.2021	365
16.09.2021	315
Ref	: Environmental (Protection) Rules, 2010 (Sixth Amendment)
	Particulate mater ($\mu\text{g}/\text{m}^3$)
Permissible limits for Fugitive Emissions	1200 $\mu\text{g}/\text{m}^3$


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Table No. 16

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 : July to September, 2021								
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.	4	9	28	16	5	8	29	15
10%	6	9	32	17	6	9	30	16
25%	7	10	37	17	7	9	31	17
50%	9	11	41	19	8	10	35	21
75%	9	12	43	25	9	11	39	26
98%	12	13	51	31	12	13	44	29
Max.	12	13	52	33	12	13	45	29
Avg.	8	11	40	21	8	10	36	21
SD	2	1	6	5	2	1	5	5
No. of obs	24				24			
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.	4	9	28	15	4	8	28	15
10%	6	9	30	17	6	9	30	16
25%	7	10	34	20	7	9	32	17
50%	9	11	36	22	8	10	38	20
75%	10	12	40	25	9	11	43	22
98%	12	13	49	31	11	14	49	28
Max.	12	13	50	31	11	15	50	28
Avg.	9	11	37	22	8	10	38	20
SD	2	1	6	4	2	2	6	4
No. of obs	24				24			


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 17

WATER TEST REPORT

MES/W/TR/10/00

Name of the Project		: Dharmapura Iron Ore Mine (ML No. 2543)			
Name of the Client		: M/s. V.N.K. Menon			
Month		: July, 2021			
Date of sampling		: 10.07.2021			
Date of Report		: 07.08.2021			
Report No		: MES/MS/WRN/77			
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)					
Sl.No.	Parameters	Method of Testing	Limits For Stream Water Standards	Result	
				SW1	SW2
i	pH	IS:3025(Part-11)	6.5 to 8.5	7.56	7.92
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.5	5.6
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.6	2.1
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	70	230
v	Colour (Hazen Units), Max	IS:3025(Part-4)	300	5	5
vi	Fluoride (as F),mg/l, Max	IS:3025(Part-60)	1.5	0.20	0.28
vii	Cadmium (as Cd), mg/l, Max	IS:3025(Part-41)	0.01	<0.002	<0.002
viii	Chloride (as Cl),mg/l, Max	IS:3025(Part-32)	600	36.0	40.0
ix	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025(Part-52)	0.05	<0.03	<0.03
x	Cyanides (as CN), mg/l, Max	IS:3025(Part-27)	0.05	<0.01	<0.01
xi	Total Dissolved Solids (mg/l), Max	IS:3025(Part-16)	1500	170	216
xii	Selenium (as Se), mg/l, Max	IS:3025(Part-56)	0.05	<0.005	<0.005
xiii	Sulphates as SO ₄ (mg/l), Max	IS:3025(Part-24)	400	20.0	19.3
xiv	Lead (as Pb) mg/l, Max	IS:3025(Part-47)	0.1	<0.005	<0.005
xv	Copper (as Cu),mg/l, Max	IS:3025(Part-42)	1.5	<0.01	<0.01
xvi	Arsenic as As (mg/l), Max	IS:3025(Part-37)	0.2	<0.002	<0.002
xvii	Iron (as Fe),mg/l, MAX	IS:3025(Part-53)	50	<0.05	0.07
xviii	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	IS:3025(Part-43)	0.005	<0.001	<0.001
xix	Zinc (as Zn),mg/l, Max	IS:3025(Part-49)	15	<0.005	<0.005
xx	Insecticides, mg/l, Max	APHA 21 st	Absent	NA	NA
xxi	Anionic detergents (as MBAS),mg/l, Max	Annex K of IS 13248	1	<0.1	<0.1
xxii	Oil and grease, mg/l, Max	IS:3025(Part-39)	0.1	<0.01	<0.01
xxiii	Nitrates (as NO ₃),mg/l, Max	IS:3025(Part-34)	50	3.0	4.6
xxiv	Alpha Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁹	NA	NA
xxv	Beta Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁸	NA	NA
SAMPLE TYPE :		Note : NA - Not Analysed			
SW1 - Ragavapura kere water					
SW2 - Dhananayakana kere water					
Samples Collected & Analysed by Mineral Engineering Services, Ballari					


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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No.18

WATER TEST REPORT

MES/W/TR/10/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No. 2543)
Name of the Client	: M/s. V.N.K. Menon
Month	: August, 2021
Date of sampling	: 14.08.2021
Date of Report	: 07.09.2021
Report No	: MES/MS/WRN/125
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)	

Sl.No.	Parameters	Method of Testing	Limits For Stream Water Standards	Result	
				SW1	SW2
i	pH	IS:3025(Part-11)	6.5 to 8.5	7.79	8.38
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.2	5.5
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.4	2.0
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	84	170
v	Colour (Hazen Units), Max	IS:3025(Part-4)	300	5	5
vi	Fluoride (as F),mg/l, Max	IS:3025(Part-60)	1.5	0.25	0.17
vii	Cadmium (as Cd), mg/l, Max	IS:3025(Part-41)	0.01	<0.002	<0.002
viii	Chloride (as Cl),mg/l, Max	IS:3025(Part-32)	600	30.0	100.0
ix	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025(Part-52)	0.05	<0.03	<0.03
x	Cyanides (as CN), mg/l, Max	IS:3025(Part-27)	0.05	<0.01	<0.01
xi	Total Dissolved Solids (mg/l), Max	IS:3025(Part-16)	1500	146	364
xii	Selenium (as Se), mg/l, Max	IS:3025(Part-56)	0.05	<0.005	<0.005
xiii	Sulphates as SO ₄ (mg/l), Max	IS:3025(Part-24)	400	22.0	38.8
xiv	Lead (as Pb) mg/l, Max	IS:3025(Part-47)	0.1	<0.005	<0.005
xv	Copper (as Cu),mg/l, Max	IS:3025(Part-42)	1.5	<0.01	<0.01
xvi	Arsenic as As (mg/l), Max	IS:3025(Part-37)	0.2	<0.002	<0.002
xvii	Iron (as Fe),mg/l, MAX	IS:3025(Part-53)	50	<0.05	<0.05
xviii	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	IS:3025(Part-43)	0.005	<0.001	<0.001
xix	Zinc (as Zn),mg/l, Max	IS:3025(Part-49)	15	<0.005	<0.005
xx	Insecticides, mg/l, Max	APHA 21 st	Absent	NA	NA
xxi	Anionic detergents (as MBAS),mg/l, Max	Annex K of IS 13248	1	<0.1	<0.1
xxii	Oil and grease, mg/l, Max	IS:3025(Part-39)	0.1	<0.01	<0.01
xxiii	Nitrates (as NO ₃),mg/l, Max	IS:3025(Part-34)	50	3.0	18.8
xxiv	Alpha Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁹	NA	NA
xxv	Beta Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁸	NA	NA

SAMPLE TYPE :

SW1 - Ragavapura kere water

SW2 - Dhananayakana kere water

Samples Collected & Analysed by Mineral Engineering Services, Ballari

Note : NA - Not Analysed

(M.R. DURGA PRASAD)
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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 19

WATER TEST REPORT

MES/W/TR/10/00

Name of the Project	: Dharmapura Iron Ore Mine (ML No. 2543)
Name of the Client	: M/s. V.N.K. Menon
Month	: September, 2021
Date of sampling	: 28.09.2021
Date of Report	: 06.10.2021
Report No	: MES/PMS/WRN/29
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)	

Sl.No.	Parameters	Method of Testing	Limits For Stream Water Standards	Result	
				SW1	SW2
i	pH	IS:3025(Part-11)	6.5 to 8.5	8.00	7.74
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.8	5.6
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	2.2	2.2
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	88	90
v	Colour (Hazen Units), Max	IS:3025(Part-4)	300	5	5
vi	Fluoride (as F),mg/l, Max	IS:3025(Part-60)	1.5	0.38	0.40
vii	Cadmium (as Cd), mg/l, Max	IS:3025(Part-41)	0.01	<0.002	<0.002
viii	Chloride (as Cl),mg/l, Max	IS:3025(Part-32)	600	28.0	27.0
ix	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025(Part-52)	0.05	<0.03	<0.03
x	Cyanides (as CN), mg/l, Max	IS:3025(Part-27)	0.05	<0.01	<0.01
xi	Total Dissolved Solids (mg/l), Max	IS:3025(Part-16)	1500	190	150
xii	Selenium (as Se), mg/l, Max	IS:3025(Part-56)	0.05	<0.005	<0.005
xiii	Sulphates as SO ₄ (mg/l), Max	IS:3025(Part-24)	400	24.7	29.0
xiv	Lead (as Pb) mg/l, Max	IS:3025(Part-47)	0.1	<0.005	<0.005
xv	Copper (as Cu),mg/l, Max	IS:3025(Part-42)	1.5	<0.01	<0.01
xvi	Arsenic as As (mg/l), Max	IS:3025(Part-37)	0.2	<0.002	<0.002
xvii	Iron (as Fe),mg/l, MAX	IS:3025(Part-53)	50	0.07	0.08
xviii	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	IS:3025(Part-43)	0.005	<0.001	<0.001
xix	Zinc (as Zn),mg/l, Max	IS:3025(Part-49)	15	<0.005	<0.005
xx	Insecticides, mg/l, Max	APHA 21 st	Absent	NA	NA
xxi	Anionic detergents (as MBAS),mg/l, Max	Annex K of IS 13248	1	<0.1	<0.1
xxii	Oil and grease, mg/l, Max	IS:3025(Part-39)	0.1	<0.01	<0.01
xxiii	Nitrates (as NO ₃),mg/l, Max	IS:3025(Part-34)	50	4.2	4.5
xxiv	Alpha Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁹	NA	NA
xxv	Beta Emitters (μcurie/ml), Max	APHA 21 st	10 ⁻⁸	NA	NA

SAMPLE TYPE :

SW1 - Ragavapura kere water

SW2 - Dhananayakana kere water

Samples Collected & Analysed by Mineral Engineering Services, Ballari

Note : NA - Not Analysed

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 20

WATER TEST REPORT

MES/W/TR/11/00

Name of the Client : M/s. V.N.K. Menon
Name of the Project : Dharmapura Iron Ore Mine (ML No. 2543)
Month : July, 2021
Date of sampling : 16.07.2021
Date of Report : 07.08.2021
Report No : MES/MS/WRN/73A
Ref : IS:10500-2012 Norms (Drinking Water Standards)

Sl. No.	Parameters	Method of Testing	Desirable Limits	Permissible Limits	Result	
					GW1	GW2
i	Colour (Hazen Units), Max	IS:3025 (Part-4)	5	15	<1	1
ii	Odour	IS:3025 (Part-5)	Agreeable	Agreeable	Agreeable	Agreeable
iii	pH	IS:3025 (Part-11)	6.5 to 8.5	6.5 - 8.5	7.92	7.85
iv	Taste	IS:3025 (Part-8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity, NTU, Max	IS:3025 (Part-10)	1	5	1.3	4.9
vi	Total Dissolved Solids, mg/l, Max	IS:3025 (Part-16)	500	2000	112	580
vii	Aluminium (as Al), Max	IS:3025 (Part-55)	0.03	0.2	<0.01	<0.01
viii	Ammonia (as total Ammonia -N), mg/l, Max	IS:3025 (Part-34)	0.5	0.5	<0.1	<0.1
ix	Anionic Detergents (as MBAS), mg/l, Max	Annex K of IS:13428	0.2	1.0	<0.1	<0.1
x	Barium (as Ba), mg/l, Max	IS:15302 & APHA 21 st	0.7	0.7	<0.05	<0.05
xi	Boron (as B), mg/l, Max	IS:3025 (Part-57)	0.5	1	<0.1	<0.1
xii	Calcium (as Ca), mg/l, Max	IS:3025 (Part-40)	75	200	34	132
xiii	Chloramines (as Cl ₂), mg/l, Max	APHA 21 st	4.0	4.0	NA	NA
xiv	Chloride as Cl (mg/l), mg/l, Max	IS:3025 (Part-32)	250	1000	9	68
xv	Copper (as Cu), mg/l, Max	IS:3025 (Part-42)	0.05	1.5	<0.01	<0.01
xvi	Fluoride (as F), mg/l, Max	IS:3025 (Part-60)	1	1.5	<0.1	0.32
xvii	Residual, Free Chlorine, mg/l, Max	IS:3025 (Part-26)	0.2	1	<0.1	<0.1
xviii	Iron (as Fe), mg/l, Max	IS:3025 (Part-53)	1.0	1.0	<0.05	<0.05
xix	Magnesium (as Mg), mg/l, Max	IS:3025 (Part-46)	30	100	4.8	41.3
xx	Manganese (as Mn), mg/l, Max	IS:3025 (Part-59)	0.1	0.3	<0.03	<0.03
xxi	Mineral Oil, mg/l, Max	Clause 6 of IS 3025 (part -39)	0.5	0.5	<0.01	<0.01
xxii	Nitrates (as NO ₃), mg/l, Max	IS:3025 (Part-34)	45	45	8.6	28.1
xxiii	Phenolics (as C ₆ H ₅ OH), mg/l, Max	IS:3025 (Part-43)	0.001	0.002	<0.001	<0.001
xxiv	Selenium (as Se), mg/l, Max	IS:3025 (Part-56)	0.01	0.01	<0.005	<0.005
xxv	Silver (as Ag), mg/l, Max	Annex J of IS:13428	0.1	0.1	<0.002	<0.002
xxvi	Sulphates (as SO ₄), mg/l, Max	IS:3025 (Part-24)	200	400	2.7	92.3
xxvii	Sulphide (as H ₂ S), mg/l, Max	IS:3025 (Part-29)	0.05	0.05	<0.01	<0.01
xxviii	Alkalinity (as CaCO ₃), mg/l, Max	IS:3025 (Part-23)	200	600	112	350
xxix	Total Hardness (as CaCO ₃), mg/l, Max	IS:3025 (Part-21)	200	600	104	500
xxx	Zinc (as Zn), mg/l, Max	IS:3025 (Part-49)	5	15	<0.005	<0.005
xxxi	Cadmium (as Cd), mg/l, Max	IS:3025 (Part-41)	0.003	0.003	<0.002	<0.002
xxxii	Cyanide (as CN), mg/l, Max	IS:3025 (Part-27)	0.05	0.05	<0.01	<0.01
xxxiii	Lead (as Pb), mg/l, Max	IS:3025 (Part-47)	0.01	0.01	<0.005	<0.005
xxxiv	Molybdenum (as Mo), mg/l, Max	APHA 21 st	0.07	0.07	NA	NA
xxxv	Mercury (as Hg), mg/l, Max	IS:3025 (Part-48)	0.001	0.001	<0.0005	<0.0005
xxxvi	Nickel (as Ni), mg/l, Max	IS:3025 (Part-54)	0.02	0.02	<0.01	<0.01
xxxvii	Pesticides (Total)	APHA 21 st	Absent	0.001	NA	NA
xxxviii	Polychlorinated biphenyls mg/l, Max	APHA 21 st Edition	0.0005	0.0005	NA	NA
xxix	Polynuclear Aromatic Hydrocarbons (as PAH), mg/l, Max	APHA 21 st Edition	0.0001	0.0001	NA	NA
XL	Arsenic (as As), mg/l, Max	IS:3025 (Part-37)	0.01	0.01	<0.002	<0.002
XLi	Chromium (as Cr ⁺⁶), mg/l, Max	IS:3025 (Part-52)	0.05	0.05	<0.03	<0.03
XLii	Trihalomethanes, mg/l, Max	APHA 21 st	--	--	NA	NA
XLiii	Radioactive materials, Bq/l, mg/l	APHA 21 st	--	--	NA	NA
XLiv	Total Coliform (/100ml)	IS:1622	Absent	Absent	Absent	Absent
XLv	E-Coli (cfu/100ml)	IS:1622	Absent	Absent	Absent	Absent

SAMPLE CODE : GW1 -Drinking Near Mine Office GW2 -Dharmapura Bore water

Samples Collected & Analysed by Mineral Engineering Services, Ballari NA - Not Analysed

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 21

WATER TEST REPORT

MES/W/TR/11/00

Name of the Client		: M/s. V.N.K. Menon				
Name of the Project		: Dharmapura Iron Ore Mine (ML No. 2543)				
Month		: July, 2021				
Date of sampling		: 14.07.2021				
Date of Report		: 07.08.2021				
Report No		: MES/MS/WRN/70				
Ref		: IS:10500-2012 Norms (Drinking Water Standards)				
Sl. No.	Parameters	Method of Testing	Desirable Limts	Permissible Limts	Result	
					GW3	GW4
i	Colour (Hazen Units), Max	IS:3025 (Part-4)	5	15	1	<1
ii	Odour	IS:3025 (Part-5)	Agreeable	Agreeable	Agreeable	Agreeable
iii	pH	IS:3025 (Part-11)	6.5 to 8.5	6.5 - 8.5	7.90	7.88
iv	Taste	IS:3025 (Part- 8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity,NTU, Max	IS:3025 (Part-10)	1	5	2.3	3.8
vi	Total Dissolved Solids,mg/l, Max	IS:3025 (Part-16)	500	2000	858	98
vii	Aluminium (as Al), Max	IS:3025 (Part-55)	0.03	0.2	<0.01	<0.01
viii	Ammonia (as total Ammonia -N),mg/l, Max	IS:3025 (Part-34)	0.5	0.5	<0.1	<0.1
ix	Anionic Detergents (as MBAS),mg/l , Max	Annex K of Is:13428	0.2	1.0	<0.1	<0.1
x	Barium (as Ba), mg/l, Max	IS:15302 & APHA 21 st	0.7	0.7	<0.05	<0.05
xi	Boron (as B), mg/l, Max	IS:3025 (Part-57)	0.5	1	<0.1	<0.1
xii	Calcium (as Ca),mg/l, Max	IS:3025 (Part-40)	75	200	80	16
xiii	Chloramines (as Cl ₂), mg/l. Max	APHA 21 st	4.0	4.0	NA	NA
xiv	Chloride as Cl (mg/l),mg/l, Max	IS:3025 (Part-32)	250	1000	300	15
xv	Copper (as Cu),mg/l, Max	IS:3025 (Part-42)	0.05	1.5	<0.01	<0.01
xvi	Fluoride (as F),mg/l, Max	IS:3025 (Part-60)	1	1.5	0.50	<0.1
xvii	Residual, Free Chlorine,mg/l, Max	IS:3025 (Part-26)	0.2	1	<0.1	<0.1
xviii	Iron (as Fe),mg/l, Max	IS:3025 (Part-53)	1.0	1.0	<0.05	<0.05
xix	Magnesium (as Mg)mg/l, Max	IS:3025 (Part-46)	30	100	53.4	10
xx	Manganese (as Mn),mg/l, Max	IS:3025 (Part-59)	0.1	0.3	<0.03	<0.03
xxi	Mineral Oil,mg/l, Max	Clause 6 of IS 3025 (part -39)	0.5	0.5	<0.1	<0.1
xxii	Nitrates (as NO ₃),mg/l, Max	IS:3025 (Part-34)	45	45	1.9	1.28
xxiii	Phenolics (as C ₆ H ₅ OH),mg/l, Max	IS:3025 (Part-43)	0.001	0.002	<0.001	<0.001
xxiv	Selenium (as Se),mg/l, Max	IS:3025 (Part-56)	0.01	0.01	<0.005	<0.005
xxv	Silver (as Ag), mg/l. Max	Annex J of Is:13428	0.1	0.1	<0.002	<0.002
xxvi	Sulphates (as SO ₄),mg/l, Max	IS:3025 (Part-24)	200	400	58.5	75
xxvii	Sulphide (as H ₂ S) , mg/l, Max	IS:3025 (Part-29)	0.05	0.05	<0.01	<0.01
xxviii	Alkalinity (as CaCO ₃) mg/l, Max	IS:3025 (Part-23)	200	600	300	80
xxix	Total Hardness (as CaCO ₃),mg/l, Max	IS:3025 (Part-21)	200	600	400	80
xxx	Zinc (as Zn),mg/l, Max	IS:3025 (Part-49)	5	15	<0.005	<0.005
xxxi	Cadmium (as Cd),mg/l, Max	IS:3025 (Part-41)	0.003	0.003	<0.002	<0.002
xxxii	Cyanide (as CN),mg/l, Max	IS:3025 (Part-27)	0.05	0.05	<0.01	<0.01
xxxiii	Lead (as Pb),mg/l, Max	IS:3025 (Part-47)	0.01	0.01	<0.005	<0.005
xxxiv	Molybdenum (as Mo), mg/l, Max	APHA 21 st	0.07	0.07	NA	NA
xxxv	Mercury (as Hg),mg/l, Max	IS:3025 (Part-48)	0.001	0.001	<0.0005	<0.0005
xxxvi	Nickel (as Ni),mg/l, Max	IS:3025 (Part-54)	0.02	0.02	<0.01	<0.01
xxxvii	Pesticides (Total)	APHA 21 st	Absent	0.001	NA	NA
xxxviii	Polychlorinated biphenyls mg/l, Max	APHA 21 st Edition	0.0005	0.0005	NA	NA
xxix	Polynuclear Aromatic Hydrocarbons (as PAH),mg/l, Max	APHA 21 st Edition	0.0001	0.0001	NA	NA
XL	Arsenic (as As),mg/l, Max	IS:3025 (Part-37)	0.01	0.01	<0.002	<0.002
XLi	Chromium (as Cr ⁺⁶),mg/l, Max	IS:3025 (Part-52)	0.05	0.05	<0.03	<0.03
XLii	Trihalomethanes,mg/l, Max	APHA 21 st	--	--	NA	NA
XLiii	Radioactive materials,Bq/l,mg/l	APHA 21 st	--	--	NA	NA
XLiv	Total Coliform (/100ml)	IS:1622	Absent	Absent	Absent	Absent
XLv	E-Coli (cfu/100ml)	IS:1622	Absent	Absent	Absent	Absent

SAMPLE CODE : GW3 - Yeshwanthanagar Bore water

GW4 - Tayammakolla Bore water

Samples Collected & Analysed by Mineral Engineering Services, Ballari

NA - Not Analysed

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 22

NOISE LEVEL DATA

MES/NOISE/FR/02/00

Name of the Client		: M/s. V.N.K. Menon																	
Name of the Project		: Dharmapura Iron Ore Mine (ML No. 2543)																	
Date of monitoring		: 21.07.2021																	
Date of Report		: 07.08.2021																	
Report No		: MES/MS/NRN/17																	
Code No.	Monitoring stations	Day			Night														
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}												
Bufferzone																			
N1	Dharmapura	37.0	51.6	56.8	35.0	42.3	45.3												
N2	Yeshwanthanagar	38.0	49.6	55.0	34.0	43.3	46.0												
N3	Ramgad village	36.0	50.4	54.0	34.0	42.5	46.3												
Corezone																			
N4	Core zone Near Mines office	37.0	48.0	54.8	34.0	40.1	45.6												
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines Leq. Limit dB(A) <table border="0"> <tr> <td></td> <td>Day</td> <td>Night</td> </tr> <tr> <td>Industrial areas</td> <td>75</td> <td>70</td> </tr> <tr> <td>Commerecial area</td> <td>65</td> <td>55</td> </tr> <tr> <td>Residential area</td> <td>55</td> <td>45</td> </tr> </table>									Day	Night	Industrial areas	75	70	Commerecial area	65	55	Residential area	55	45
	Day	Night																	
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Residential area	55	45																	

(M.R. DURGA PRASAD)
GOVT. ANALYST

(M.S. RAJU)
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Website : www.envtest.com

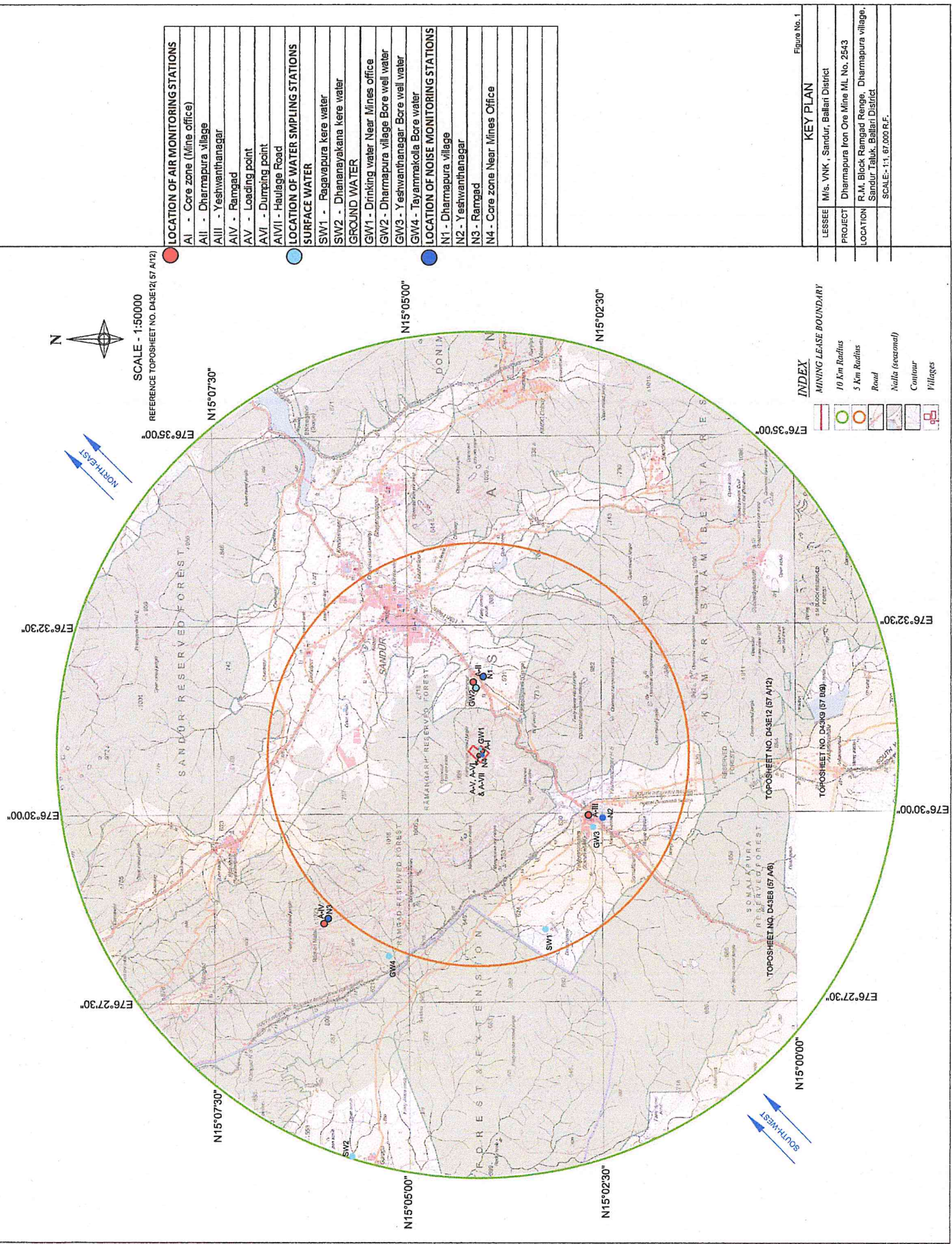


Figure No. 1

KEY PLAN	
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.	