

ENVIRONMENTAL MONITORING REPORT

October to December, 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	: 08.11.2021					
Reference IS 5182	Report No : MES/PMS/ARN/184					
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
08.10.2021	9	13	46	23	<20	<1
09.10.2021	7	10	38	17	<20	<1
13.10.2021	8	11	45	24	<20	<1
16.10.2021	5	13	51	27	<20	<1
20.10.2021	9	12	37	24	<20	<1
21.10.2021	6	10	36	18	<20	<1
27.10.2021	12	12	45	27	<20	<1
28.10.2021	9	11	41	25	<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
08.10.2021	0.09	<0.5	<0.5	<0.5	0.32	28
09.10.2021	0.05	<0.5	<0.5	<0.5	0.25	27
13.10.2021	0.12	<0.5	<0.5	<0.5	0.24	24
16.10.2021	0.15	<0.5	<0.5	<0.5	0.31	25
20.10.2021	0.10	<0.5	<0.5	<0.5	0.15	25
21.10.2021	0.13	<0.5	<0.5	<0.5	0.29	21
27.10.2021	0.14	<0.5	<0.5	<0.5	0.15	28
28.10.2021	0.11	<0.5	<0.5	<0.5	0.12	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. 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	: 08.11.2021					
Reference IS 5182	Report No : MES/PMS/ARN/176					
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
06.10.2021	9	11	42	27	<20	<1
07.10.2021	8	10	35	16	<20	<1
11.10.2021	9	9	30	19	<20	<1
12.10.2021	10	9	40	21	<20	<1
20.10.2021	11	11	43	26	<20	<1
21.10.2021	9	10	36	15	<20	<1
27.10.2021	7	13	41	22	<20	<1
28.10.2021	10	10	30	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
06.10.2021	0.12	<0.5	<0.5	<0.5	0.25	27
07.10.2021	0.07	<0.5	<0.5	<0.5	0.16	28
11.10.2021	0.05	<0.5	<0.5	<0.5	0.20	24
12.10.2021	0.13	<0.5	<0.5	<0.5	0.21	25
20.10.2021	0.10	<0.5	<0.5	<0.5	0.25	20
21.10.2021	0.14	<0.5	<0.5	<0.5	0.36	28
27.10.2021	0.11	<0.5	<0.5	<0.5	0.13	27
28.10.2021	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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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	: 08.11.2021					
Reference IS 5182	Report No : MES/PMS/ARN/177					
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
06.10.2021	8	11	33	19	<20	<1
07.10.2021	9	12	37	18	<20	<1
11.10.2021	10	11	39	16	<20	<1
12.10.2021	8	10	47	25	<20	<1
20.10.2021	10	13	50	27	<20	<1
21.10.2021	8	13	46	24	<20	<1
27.10.2021	9	10	40	26	<20	<1
28.10.2021	5	12	35	19	<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
06.10.2021	0.10	<0.5	<0.5	<0.5	0.19	21
07.10.2021	0.12	<0.5	<0.5	<0.5	0.27	25
11.10.2021	0.15	<0.5	<0.5	<0.5	0.32	26
12.10.2021	0.10	<0.5	<0.5	<0.5	0.29	23
20.10.2021	0.12	<0.5	<0.5	<0.5	0.17	27
21.10.2021	0.05	<0.5	<0.5	<0.5	0.20	23
27.10.2021	0.06	<0.5	<0.5	<0.5	0.25	25
28.10.2021	0.05	<0.5	<0.5	<0.5	0.16	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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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	: 08.11.2021					
Reference IS 5182	Report No : MES/PMS/ARN/196					
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
04.10.2021	6	13	33	17	<20	<1
05.10.2021	9	12	47	25	<20	<1
11.10.2021	9	10	36	16	<20	<1
12.10.2021	8	12	49	26	<20	<1
20.10.2021	7	10	38	19	<20	<1
21.10.2021	8	10	27	18	<20	<1
29.10.2021	9	12	28	17	<20	<1
30.10.2021	8	11	25	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
04.10.2021	0.11	<0.5	<0.5	<0.5	0.29	21
05.10.2021	0.05	<0.5	<0.5	<0.5	0.17	22
11.10.2021	0.07	<0.5	<0.5	<0.5	0.15	23
12.10.2021	0.05	<0.5	<0.5	<0.5	0.05	20
20.10.2021	0.15	<0.5	<0.5	<0.5	0.07	21
21.10.2021	0.09	<0.5	<0.5	<0.5	0.21	25
29.10.2021	0.15	<0.5	<0.5	<0.5	0.31	21
30.10.2021	0.11	<0.5	<0.5	<0.5	0.28	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. 5

Test 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	: 08.11.2021
Report No	: MES/PMS/ARN/185
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
09.10.2021	398
16.10.2021	366

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 08.11.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
08.10.2021	369
13.10.2021	378

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 08.11.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
09.10.2021	378
16.10.2021	398
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	: 06.12.2021					
Reference IS 5182	Report No : MES/PMS/ARN/330					
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
05.11.2021	9	11	45	25	<20	<1
06.11.2021	8	10	53	27	<20	<1
10.11.2021	7	9	48	24	<20	<1
11.11.2021	11	13	46	26	<20	<1
17.11.2021	12	21	40	22	<20	<1
18.11.2021	10	12	36	19	<20	<1
22.11.2021	7	8	50	25	<20	<1
23.11.2021	10	11	35	18	<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
05.11.2021	0.10	<0.5	<0.5	<0.5	0.12	21
06.11.2021	0.13	<0.5	<0.5	<0.5	0.15	21
10.11.2021	0.12	<0.5	<0.5	<0.5	0.19	23
11.11.2021	0.11	<0.5	<0.5	<0.5	0.17	20
17.11.2021	0.14	<0.5	<0.5	<0.5	0.19	21
18.11.2021	0.12	<0.5	<0.5	<0.5	0.17	22
22.11.2021	0.10	<0.5	<0.5	<0.5	0.15	23
23.11.2021	0.13	<0.5	<0.5	<0.5	0.12	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. 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	: 06.12.2021					
Reference IS 5182	Report No : MES/PMS/ARN/297					
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
05.11.2021	7	9	40	22	<20	<1
06.11.2021	10	14	41	28	<20	<1
08.11.2021	8	13	34	18	<20	<1
09.11.2021	8	10	42	21	<20	<1
15.11.2021	9	11	41	25	<20	<1
16.11.2021	8	10	33	20	<20	<1
22.11.2021	11	16	29	20	<20	<1
23.11.2021	8	10	41	23	<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
05.11.2021	0.14	<0.5	<0.5	<0.5	0.16	21
06.11.2021	0.12	<0.5	<0.5	<0.5	0.27	25
08.11.2021	0.12	<0.5	<0.5	<0.5	0.32	26
09.11.2021	0.10	<0.5	<0.5	<0.5	0.14	22
15.11.2021	0.11	<0.5	<0.5	<0.5	0.09	20
16.11.2021	0.07	<0.5	<0.5	<0.5	0.07	24
22.11.2021	0.14	<0.5	<0.5	<0.5	0.13	21
23.11.2021	0.06	<0.5	<0.5	<0.5	0.27	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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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	: 06.12.2021					
Reference IS 5182	Report No : MES/PMS/ARN/298					
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
05.11.2021	11	19	45	28	<20	<1
06.11.2021	9	11	57	26	<20	<1
08.11.2021	8	15	38	22	<20	<1
09.11.2021	10	13	40	27	<20	<1
15.11.2021	11	12	46	26	<20	<1
16.11.2021	12	15	51	29	<20	<1
22.11.2021	7	12	37	20	<20	<1
23.11.2021	10	13	43	22	<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
05.11.2021	0.10	<0.5	<0.5	<0.5	0.26	22
06.11.2021	0.13	<0.5	<0.5	<0.5	0.28	23
08.11.2021	0.10	<0.5	<0.5	<0.5	0.29	21
09.11.2021	0.11	<0.5	<0.5	<0.5	0.24	24
15.11.2021	0.07	<0.5	<0.5	<0.5	0.16	25
16.11.2021	0.09	<0.5	<0.5	<0.5	0.14	21
22.11.2021	0.07	<0.5	<0.5	<0.5	0.18	20
23.11.2021	0.11	<0.5	<0.5	<0.5	0.19	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	: 06.12.2021					
Reference IS 5182	Report No : MES/PMS/ARN/312					
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
05.11.2021	7	9	46	25	<20	<1
06.11.2021	10	12	30	18	<20	<1
08.11.2021	9	11	43	26	<20	<1
09.11.2021	11	13	38	21	<20	<1
15.11.2021	11	12	30	19	<20	<1
16.11.2021	10	11	46	20	<20	<1
22.11.2021	7	11	44	22	<20	<1
23.11.2021	10	15	33	18	<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
05.11.2021	0.10	<0.5	<0.5	<0.5	0.11	27
06.11.2021	0.12	<0.5	<0.5	<0.5	0.09	28
08.11.2021	0.15	<0.5	<0.5	<0.5	0.05	27
09.11.2021	0.09	<0.5	<0.5	<0.5	0.11	24
15.11.2021	0.15	<0.5	<0.5	<0.5	0.06	25
16.11.2021	0.09	<0.5	<0.5	<0.5	0.31	25
22.11.2021	0.10	<0.5	<0.5	<0.5	0.08	21
23.11.2021	0.14	<0.5	<0.5	<0.5	0.32	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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ISO9001:2015
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Table No. 10

Test 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	: 06.12.2021
Report No	: MES/PMS/ARN/312
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
11.11.2021	367
18.11.2021	459

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 06.12.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
10.11.2021	486
17.11.2021	412

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 06.12.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
10.11.2021	561
11.11.2021	349
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. 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	: 06.01.2022					
Reference IS 5182	Report No : MES/WS/ARN/83					
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
06.12.2021	12	15	54	25	<20	<1
07.12.2021	8	10	57	23	<20	<1
15.12.2021	7	9	59	30	<20	<1
16.12.2021	11	13	56	26	<20	<1
22.12.2021	12	21	52	28	<20	<1
23.12.2021	10	12	56	27	<20	<1
29.12.2021	7	9	46	25	<20	<1
30.12.2021	10	14	53	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
06.12.2021	0.10	<0.5	<0.5	<0.5	0.32	20
07.12.2021	0.13	<0.5	<0.5	<0.5	0.33	21
15.12.2021	0.12	<0.5	<0.5	<0.5	0.25	23
16.12.2021	0.11	<0.5	<0.5	<0.5	0.26	25
22.12.2021	0.14	<0.5	<0.5	<0.5	0.29	26
23.12.2021	0.12	<0.5	<0.5	<0.5	0.30	24
29.12.2021	0.10	<0.5	<0.5	<0.5	0.26	22
30.12.2021	0.13	<0.5	<0.5	<0.5	0.23	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. 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	: 06.01.2022					
Reference IS 5182	Report No : MES/WS/ARN/66					
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
06.12.2021	8	10	33	19	<20	<1
07.12.2021	9	12	36	20	<20	<1
15.12.2021	10	15	42	22	<20	<1
16.12.2021	12	14	53	26	<20	<1
22.12.2021	11	12	45	21	<20	<1
23.12.2021	8	11	54	27	<20	<1
29.12.2021	6	9	42	20	<20	<1
30.12.2021	10	13	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
06.12.2021	0.10	<0.5	<0.5	<0.5	0.16	21
07.12.2021	0.07	<0.5	<0.5	<0.5	0.32	25
15.12.2021	0.16	<0.5	<0.5	<0.5	0.34	26
16.12.2021	0.13	<0.5	<0.5	<0.5	0.32	22
22.12.2021	0.15	<0.5	<0.5	<0.5	0.13	20
23.12.2021	0.09	<0.5	<0.5	<0.5	0.25	24
29.12.2021	0.07	<0.5	<0.5	<0.5	0.21	21
30.12.2021	0.11	<0.5	<0.5	<0.5	0.29	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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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	: 06.01.2022					
Reference IS 5182	Report No : MES/WS/ARN/67					
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
06.12.2021	8	12	55	26	<20	<1
07.12.2021	9	11	51	19	<20	<1
15.12.2021	10	14	40	22	<20	<1
16.12.2021	11	13	46	24	<20	<1
22.12.2021	10	12	54	26	<20	<1
23.12.2021	11	14	43	18	<20	<1
29.12.2021	9	12	53	25	<20	<1
30.12.2021	10	13	56	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
06.12.2021	0.09	<0.5	<0.5	<0.5	0.30	22
07.12.2021	0.13	<0.5	<0.5	<0.5	0.26	23
15.12.2021	0.12	<0.5	<0.5	<0.5	0.23	21
16.12.2021	0.07	<0.5	<0.5	<0.5	0.21	24
22.12.2021	0.30	<0.5	<0.5	<0.5	0.25	25
23.12.2021	0.07	<0.5	<0.5	<0.5	0.29	21
29.12.2021	0.10	<0.5	<0.5	<0.5	0.32	20
30.12.2021	0.05	<0.5	<0.5	<0.5	0.30	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. 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	: 06.01.2022					
Reference IS 5182	Report No : MES/WS/ARN/80					
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
06.12.2021	7	14	54	28	<20	<1
07.12.2021	10	11	51	26	<20	<1
13.12.2021	9	10	48	25	<20	<1
14.12.2021	11	13	50	26	<20	<1
22.12.2021	11	10	42	19	<20	<1
23.12.2021	10	9	44	16	<20	<1
28.12.2021	7	10	47	28	<20	<1
29.12.2021	10	14	50	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
06.12.2021	0.07	<0.5	<0.5	<0.5	0.25	20
07.12.2021	0.10	<0.5	<0.5	<0.5	0.32	21
13.12.2021	0.05	<0.5	<0.5	<0.5	0.33	20
14.12.2021	0.12	<0.5	<0.5	<0.5	0.25	23
22.12.2021	0.07	<0.5	<0.5	<0.5	0.26	20
23.12.2021	0.10	<0.5	<0.5	<0.5	0.29	21
28.12.2021	0.12	<0.5	<0.5	<0.5	0.30	23
29.12.2021	0.18	<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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Table No. 15

Test 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	: 06.01.2022
Report No	: MES/WS/ARN/84
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
06.12.2021	365
15.12.2021	358

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 06.01.2022
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
07.12.2021	374
16.12.2021	396

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 06.01.2022
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
06.12.2021	335
16.12.2021	339
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 : October to December, 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.	5	8	35	17	6	9	29	15
10%	7	9	36	18	7	9	31	17
25%	7	10	41	23	8	10	35	20
50%	9	12	46	25	9	11	41	21
75%	10	13	53	26	10	13	42	25
98%	12	21	58	29	12	16	54	28
Max.	12	21	59	30	12	16	54	28
Avg.	9	12	47	24	9	11	40	22
SD	2	3	7	3	1	2	7	4
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.	5	10	33	16	6	9	25	15
10%	8	11	37	18	7	10	29	16
25%	8	12	40	20	8	10	33	18
50%	10	12	46	25	9	11	44	21
75%	10	13	51	26	10	12	47	26
98%	12	17	57	29	11	15	53	28
Max.	12	19	57	29	11	15	54	28
Avg.	9	13	45	23	9	11	41	22
SD	2	2	7	4	2	2	9	4
No. of obs	24				24			


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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 : October, 2021
Date of sampling : 12.10.2021
Date of Report : 08.11.2021
Report No : MES/PMS/WRN/63
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	7.82	7.88
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.6	5.4
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	2.1	2.0
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	78	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	0.35
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	26.0	25.0
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	160	140
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	4.0	15.7
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	0.09
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	4.3	4.7
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

(M.R. DURGA PRASAD)
GOVT. ANALYST

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MINERAL ENGINEERING SERVICES



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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 : November, 2021
Date of sampling : 09.11.2021
Date of Report : 06.12.2021
Report No : MES/PMS/WRN/93
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	7.94	7.78
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	2.3	3.2
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	11110	188
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	0.30	0.41
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	117.5	19.0
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	450	184
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	37.7	18.9
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	8.9	6.9
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

(M.R. DURGA PRASAD)
GOVT. ANALYST

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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		: December, 2021			
Date of sampling		: 17.12.2021			
Date of Report		: 06.01.2022			
Report No		: MES/WS/WRN/26			
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	8.15	8.12
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.6	5.5
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	2.3	2.1
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	110	96
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	0.30
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	36.0
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	180	160
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	15.8	8.5
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	0.06
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	19.8	16.2
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. 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		: October, 2021				
Date of sampling		: 09.10.2021				
Date of Report		: 08.11.2021				
Report No		: MES/PMS/WRN/59				
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	7.53	7.12
iv	Taste	IS:3025 (Part- 8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity,NTU, Max	IS:3025 (Part-10)	1	5	2.0	3.5
vi	Total Dissolved Solids,mg/l, Max	IS:3025 (Part-16)	500	2000	124	1060
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	19	148
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	26	230
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	0.45
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	7.3	55.9
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	12.4	31.3
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	8.5	120.0
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	74	500
xxix	Total Hardness (as CaCO ₃),mg/l, Max	IS:3025 (Part-21)	200	600	78	600
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 : October, 2021
Date of sampling : 09.10.2021
Date of Report : 08.11.2021
Report No : MES/PMS/WRN/55
Ref : IS:10500-2012 Norms (Drinking Water Standards)

Sl. No.	Parameters	Method of Testing	Desirable Limits	Permissible Limits	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	7.51	7.85
iv	Taste	IS:3025 (Part-8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity, NTU, Max	IS:3025 (Part-10)	1	5	4.5	2.9
vi	Total Dissolved Solids, mg/l, Max	IS:3025 (Part-16)	500	2000	1122	204
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	121	32
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	325	40
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	0.40	<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	131.0	13
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	28.7	2.15
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	60.1	45
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	490	990
xxix	Total Hardness (as CaCO ₃), mg/l, Max	IS:3025 (Part-21)	200	600	840	132
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		: 09.10.2021					
Date of Report		: 08.11.2021					
Report No		: MES/PMS/NRN/53					
Code	Monitoring stations	Day			Night		
No.		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}
Bufferzone							
N1	Dharmapura	36.0	52.1	58.0	35.0	43.0	47.6
N2	Yeshwanthanagar	37.0	50.6	57.3	34.0	43.9	48.0
N3	Ramgad village	36.0	51.4	56.0	34.0	43.5	46.3
Corezone							
N4	Core zone Near Mines office	37.0	47.9	58.0	34.0	42.7	47.0
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines Leq. Limit dB(A) Day Night Industrial areas 75 70 Commerecial area 65 55 Residential area 55 45							


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