

ENVIRONMENTAL MONITORING REPORT

April to June, 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



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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 : 05.05.2021
Reference IS 5182

Report No : MES/SS/ARN/144

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
07.04.2021	12	18	37	19	<20	<1
08.04.2021	9	11	42	26	<20	<1
14.04.2021	10	17	48	26	<20	<1
15.04.2021	13	14	35	25	<20	<1
21.04.2021	13	16	44	18	<20	<1
22.04.2021	7	13	40	27	<20	<1
28.04.2021	11	13	38	22	<20	<1
29.04.2021	7	15	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
07.04.2021	0.16	<0.5	<0.5	<0.5	0.22	29
08.04.2021	0.07	<0.5	<0.5	<0.5	0.05	21
14.04.2021	0.05	<0.5	<0.5	<0.5	0.06	20
15.04.2021	0.08	<0.5	<0.5	<0.5	0.05	23
21.04.2021	0.08	<0.5	<0.5	<0.5	0.23	22
22.04.2021	0.21	<0.5	<0.5	<0.5	0.20	26
28.04.2021	0.07	<0.5	<0.5	<0.5	0.08	25
29.04.2021	0.07	<0.5	<0.5	<0.5	0.42	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

(M.R. DURGA PRASAD)
GOVT. ANALYST

(M.S. RAJU)
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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 : 05.05.2021

Reference IS 5182

Report No : MES/SS/ARN/136

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
07.04.2021	10	15	52	22	<20	<1
08.04.2021	6	12	51	25	<20	<1
14.04.2021	7	10	45	19	<20	<1
15.04.2021	12	17	55	29	<20	<1
21.04.2021	9	15	50	26	<20	<1
22.04.2021	12	17	60	37	<20	<1
28.04.2021	13	15	42	26	<20	<1
29.04.2021	8	13	59	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
07.04.2021	0.13	<0.5	<0.5	<0.5	0.20	20
08.04.2021	0.17	<0.5	<0.5	<0.5	0.81	22
14.04.2021	0.13	<0.5	<0.5	<0.5	0.34	24
15.04.2021	0.11	<0.5	<0.5	<0.5	0.19	20
21.04.2021	0.08	<0.5	<0.5	<0.5	0.22	25
22.04.2021	0.07	<0.5	<0.5	<0.5	0.08	20
28.04.2021	0.11	<0.5	<0.5	<0.5	0.09	22
29.04.2021	0.08	<0.5	<0.5	<0.5	0.09	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. 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 : 05.05.2021
Reference IS 5182

Report No : MES/SS/ARN/137

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
07.04.2021	9	14	43	22	<20	<1
08.04.2021	6	15	42	25	<20	<1
14.04.2021	9	10	47	22	<20	<1
15.04.2021	10	18	48	24	<20	<1
21.04.2021	12	17	57	33	<20	<1
22.04.2021	9	21	50	31	<20	<1
28.04.2021	11	13	30	18	<20	<1
29.04.2021	6	17	54	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
07.04.2021	0.08	<0.5	<0.5	<0.5	0.19	21
08.04.2021	0.15	<0.5	<0.5	<0.5	0.30	26
14.04.2021	0.20	<0.5	<0.5	<0.5	0.21	20
15.04.2021	0.11	<0.5	<0.5	<0.5	0.08	26
21.04.2021	0.05	<0.5	<0.5	<0.5	0.35	23
22.04.2021	0.05	<0.5	<0.5	<0.5	0.22	21
28.04.2021	<0.05	<0.5	<0.5	<0.5	0.10	22
29.04.2021	0.06	<0.5	<0.5	<0.5	0.27	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. 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 : 05.05.2021
Reference IS 5182

Report No : MES/SS/ARN/169

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
02.04.2021	7	13	41	25	<20	<1
03.04.2021	11	14	53	22	<20	<1
09.04.2021	7	11	48	25	<20	<1
10.04.2021	8	12	40	20	<20	<1
14.04.2021	10	11	46	22	<20	<1
15.04.2021	6	10	39	29	<20	<1
23.04.2021	10	12	50	27	<20	<1
24.04.2021	7	9	33	20	<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
02.04.2021	0.08	<0.5	<0.5	<0.5	0.16	20
03.04.2021	0.20	<0.5	<0.5	<0.5	0.19	24
09.04.2021	0.11	<0.5	<0.5	<0.5	0.35	24
10.04.2021	0.25	<0.5	<0.5	<0.5	0.19	28
14.04.2021	0.05	<0.5	<0.5	<0.5	0.12	20
15.04.2021	0.07	<0.5	<0.5	<0.5	0.22	21
23.04.2021	0.08	<0.5	<0.5	<0.5	0.18	27
24.04.2021	0.27	<0.5	<0.5	<0.5	0.11	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. 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	: 05.05.2021
Report No	: MES/SS/ARN/162
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
08.04.2021	445
22.04.2021	356

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 05.05.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
07.04.2021	438
21.04.2021	356

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 05.05.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
07.04.2021	509
21.04.2021	534
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 : 04.06.2021
Reference IS 5182

Report No : MES/SS/ARN/311

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
03.05.2021	7	11	45	25	<20	<1
04.05.2021	10	10	40	22	<20	<1
12.05.2021	11	12	54	28	<20	<1
13.05.2021	7	12	48	22	<20	<1
17.05.2021	9	14	56	29	<20	<1
18.05.2021	10	13	50	27	<20	<1
24.05.2021	7	9	48	33	<20	<1
25.05.2021	7	11	51	39	<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
03.05.2021	0.19	<0.5	<0.5	<0.5	0.25	23
04.05.2021	0.11	<0.5	<0.5	<0.5	0.16	24
12.05.2021	0.08	<0.5	<0.5	<0.5	0.23	25
13.05.2021	0.13	<0.5	<0.5	<0.5	0.15	22
17.05.2021	0.08	<0.5	<0.5	<0.5	0.31	23
18.05.2021	0.15	<0.5	<0.5	<0.5	0.22	25
24.05.2021	0.16	<0.5	<0.5	<0.5	0.26	28
25.05.2021	0.05	<0.5	<0.5	<0.5	0.32	22
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 : 04.06.2021
Reference IS 5182

Report No : MES/SS/ARN/277

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
05.05.2021	11	13	35	18	<20	<1
06.05.2021	7	15	43	23	<20	<1
12.05.2021	13	16	46	28	<20	<1
13.05.2021	10	13	48	25	<20	<1
19.05.2021	7	11	40	24	<20	<1
20.05.2021	11	13	50	26	<20	<1
24.05.2021	9	12	46	23	<20	<1
25.05.2021	6	9	30	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
05.05.2021	0.11	<0.5	<0.5	<0.5	0.11	21
06.05.2021	0.11	<0.5	<0.5	<0.5	0.08	27
12.05.2021	0.07	<0.5	<0.5	<0.5	0.16	24
13.05.2021	0.05	<0.5	<0.5	<0.5	0.15	26
19.05.2021	0.06	<0.5	<0.5	<0.5	0.22	20
20.05.2021	0.08	<0.5	<0.5	<0.5	0.21	23
24.05.2021	0.06	<0.5	<0.5	<0.5	0.44	20
25.05.2021	<0.05	<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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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 : 04.06.2021
Reference IS 5182

Report No : MES/SS/ARN/278

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
05.05.2021	11	12	49	26	<20	<1
06.05.2021	6	12	56	27	<20	<1
12.05.2021	11	13	48	27	<20	<1
13.05.2021	13	14	63	33	<20	<1
19.05.2021	9	11	54	28	<20	<1
20.05.2021	11	12	50	27	<20	<1
24.05.2021	10	13	43	25	<20	<1
25.05.2021	7	10	51	31	<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
05.05.2021	0.13	<0.5	<0.5	<0.5	0.16	22
06.05.2021	0.09	<0.5	<0.5	<0.5	0.11	23
12.05.2021	0.15	<0.5	<0.5	<0.5	0.06	22
13.05.2021	0.08	<0.5	<0.5	<0.5	0.11	24
19.05.2021	0.07	<0.5	<0.5	<0.5	0.06	23
20.05.2021	0.06	<0.5	<0.5	<0.5	0.08	24
24.05.2021	0.11	<0.5	<0.5	<0.5	0.15	21
25.05.2021	0.05	<0.5	<0.5	<0.5	0.21	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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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 : 05.06.2021

Reference IS 5182

Report No : MES/SS/ARN/295

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
07.05.2021	9	11	54	28	<20	<1
08.05.2021	7	10	38	29	<20	<1
10.05.2021	11	15	49	27	<20	<1
11.05.2021	10	11	50	26	<20	<1
21.05.2021	11	12	53	22	<20	<1
22.05.2021	9	10	42	28	<20	<1
26.05.2021	13	14	59	22	<20	<1
27.05.2021	9	16	51	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
07.05.2021	0.13	<0.5	<0.5	<0.5	0.24	21
08.05.2021	0.16	<0.5	<0.5	<0.5	0.22	25
10.05.2021	0.05	<0.5	<0.5	<0.5	0.23	26
11.05.2021	0.11	<0.5	<0.5	<0.5	0.15	24
21.05.2021	0.07	<0.5	<0.5	<0.5	0.42	23
22.05.2021	0.05	<0.5	<0.5	<0.5	0.16	22
26.05.2021	0.16	<0.5	<0.5	<0.5	0.33	21
27.05.2021	0.04	<0.5	<0.5	<0.5	0.22	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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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	: 04.06.2021
Report No	: MES/SS/ARN/312
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
03.05.2021	428
17.05.2021	466

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 04.06.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
04.05.2021	478
18.05.2021	488

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 04.06.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
04.05.2021	462
18.05.2021	496
Ref	: Environmental (Protection) Rules, 2010 (Sixth Amendment)
Permissible limits for Fugitive Emissions	Particulate mater ($\mu\text{g}/\text{m}^3$) 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 : 07.07.2021
Reference IS 5182

Report No : MES/MS/ARN/60

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
04.06.2021	13	15	30	27	<20	<1
05.06.2021	7	11	35	26	<20	<1
09.06.2021	9	13	44	25	<20	<1
10.06.2021	11	14	36	25	<20	<1
16.06.2021	8	11	40	28	<20	<1
17.06.2021	10	12	37	26	<20	<1
24.06.2021	11	13	56	42	<20	<1
25.06.2021	7	9	48	32	<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
04.06.2021	0.09	<0.5	<0.5	<0.5	0.05	25
05.06.2021	0.05	<0.5	<0.5	<0.5	0.18	26
09.06.2021	0.15	<0.5	<0.5	<0.5	0.15	28
10.06.2021	0.16	<0.5	<0.5	<0.5	0.35	<20
16.06.2021	0.13	<0.5	<0.5	<0.5	0.20	21
17.06.2021	0.12	<0.5	<0.5	<0.5	0.20	25
24.06.2021	0.08	<0.5	<0.5	<0.5	0.14	27
25.06.2021	0.05	<0.5	<0.5	<0.5	0.05	22
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 : 07.07.2021
Reference IS 5182

Report No : MES/MS/ARN/39

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
04.06.2021	10	12	45	24	<20	<1
05.06.2021	9	11	43	26	<20	<1
09.06.2021	7	9	30	20	<20	<1
10.06.2021	8	10	37	18	<20	<1
16.06.2021	7	9	26	19	<20	<1
17.06.2021	9	11	31	21	<20	<1
24.06.2021	12	13	35	24	<20	<1
25.06.2021	10	12	30	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
04.06.2021	0.15	<0.5	<0.5	<0.5	0.08	26
05.06.2021	0.12	<0.5	<0.5	<0.5	0.14	22
09.06.2021	0.05	<0.5	<0.5	<0.5	0.15	22
10.06.2021	<0.05	<0.5	<0.5	<0.5	0.22	21
16.06.2021	0.06	<0.5	<0.5	<0.5	0.17	20
17.06.2021	<0.05	<0.5	<0.5	<0.5	0.16	24
24.06.2021	0.07	<0.5	<0.5	<0.5	0.22	23
25.06.2021	0.10	<0.5	<0.5	<0.5	0.11	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. 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 : 07.07.2021
Reference IS 5182

Report No : MES/MS/ARN/40

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
04.06.2021	8	10	27	17	<20	<1
05.06.2021	10	11	40	23	<20	<1
09.06.2021	7	10	42	25	<20	<1
10.06.2021	9	11	50	27	<20	<1
16.06.2021	11	16	45	24	<20	<1
17.06.2021	13	15	37	21	<20	<1
24.06.2021	8	12	35	20	<20	<1
25.06.2021	6	10	44	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
04.06.2021	0.08	<0.5	<0.5	<0.5	0.13	20
05.06.2021	0.05	<0.5	<0.5	<0.5	0.17	24
09.06.2021	0.07	<0.5	<0.5	<0.5	0.16	20
10.06.2021	0.05	<0.5	<0.5	<0.5	0.20	20
16.06.2021	0.12	<0.5	<0.5	<0.5	0.14	23
17.06.2021	0.13	<0.5	<0.5	<0.5	0.15	24
24.06.2021	0.09	<0.5	<0.5	<0.5	0.18	29
25.06.2021	0.19	<0.5	<0.5	<0.5	0.09	22
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 : 07.07.2021
Reference IS 5182

Report No : MES/MS/ARN/54

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
07.06.2021	7	9	38	28	<20	<1
08.06.2021	8	12	51	25	<20	<1
18.06.2021	7	9	40	21	<20	<1
19.06.2021	12	14	29	24	<20	<1
25.06.2021	7	9	46	26	<20	<1
26.06.2021	11	12	37	23	<20	<1
28.06.2021	9	12	52	22	<20	<1
29.06.2021	8	10	41	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
07.06.2021	0.06	<0.5	<0.5	<0.5	0.11	23
08.06.2021	0.08	<0.5	<0.5	<0.5	0.16	27
18.06.2021	<0.05	<0.5	<0.5	<0.5	0.15	26
19.06.2021	0.12	<0.5	<0.5	<0.5	0.09	25
25.06.2021	0.16	<0.5	<0.5	<0.5	0.20	24
26.06.2021	0.11	<0.5	<0.5	<0.5	0.15	25
28.06.2021	0.08	<0.5	<0.5	<0.5	0.29	29
29.06.2021	0.07	<0.5	<0.5	<0.5	0.13	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. 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	: 07.07.2021
Report No	: MES/MS/ARN/61
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
09.06.2021	322
16.06.2021	308

Station at & Code	: A - VII, Dumping point
Duration	: 08 Hrs
Date of Report	: 07.07.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
10.06.2021	322
17.06.2021	355

Station at & Code	: A - VIII, Haulage Road
Duration	: 08 Hrs
Date of Report	: 07.07.2021
Date of sample	Particulate mater ($\mu\text{g}/\text{m}^3$)
09.06.2021	365
17.06.2021	322
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 : April to June, 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.	7	9	30	18	6	9	26	18
10%	7	10	35	22	7	9	30	18
25%	7	11	38	25	7	11	35	21
50%	10	13	44	26	9	13	44	24
75%	11	14	49	28	11	15	50	26
98%	13	18	56	41	13	17	60	33
Max.	13	18	56	42	13	17	60	37
Avg.	9	13	44	27	9	13	43	24
SD	2	2	7	5	2	2	10	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.	6	10	27	17	6	9	29	20
10%	6	10	36	20	7	9	37	21
25%	8	11	42	22	7	10	40	22
50%	9	13	48	25	9	12	46	25
75%	11	15	50	27	10	12	51	27
98%	13	20	60	33	13	16	57	29
Max.	13	21	63	33	13	16	59	29
Avg.	9	13	46	25	9	12	45	25
SD	2	3	8	4	2	2	7	3
No. of obs	24				24			

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OHSAS (ISO 45001:2018)

Table No. 17

WATER ANALYSIS REPORT

MES/W/FTR/12/00

Name of the Project : Dharmapura Iron Ore Mine (ML No. 2543)
Name of the Client : M/s. V.N.K. Menon
Month : April, 2021
Date of sampling : 09.04.2021
Date of Report : 07.05.2021
Report No : MES/SS/WRN/66
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	8.13
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	1.5	1.4
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	184	190
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	0.60	0.77
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	29.0
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	210	162
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	19.3	15.1
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	4.4	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 :

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.18

WATER ANALYSIS REPORT

MES/W/FTR/12/00

Name of the Project : Dharmapura Iron Ore Mine (ML No. 2543)
Name of the Client : M/s. V.N.K. Menon
Month : May, 2021
Date of sampling : 26.05.2021
Date of Report : 05.06.2021
Report No : MES/SS/WRN/75
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	8.08	8.20
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.4	5.5
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.4	1.5
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	170	176
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	0.51	0.65
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	32.0
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	238	180
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	24.5	21.6
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	6.1	6.2
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

(M.R. DURGA PRASAD)
GOVT. ANALYST

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ISO9001:2015
OHSAS (ISO 45001:2018)

Table No. 19

WATER ANALYSIS REPORT

MES/W/FTR/12/00

Name of the Project : Dharmapura Iron Ore Mine (ML No. 2543)
 Name of the Client : M/s. V.N.K. Menon
 Month : June, 2021
 Date of sampling : 08.06.2021
 Date of Report : 07.07.2021
 Report No : MES/MS/WRN/24
 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	7.63	7.54
ii	Dissolved Oxygen (as O ₂), mg/l, Min	IS:3025(Part-38)	4	5.4	5.5
iii	Biochemical Oxygen Demand (as O ₂), mg/l, Max	IS:3025(Part-44)	3	1.5	1.3
iv	Total Coliform (mpn/100ml), Max	IS:1622	5000	75	98
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	0.42
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	30.0
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	188	220
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	26.0
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	0.05	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	3.5	6.0
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. 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 : April, 2021
Date of sampling : 22.04.2021
Date of Report : 05.05.2021
Report No : MES/SS/WRN/46A
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	7.85	7.85
iv	Taste	IS:3025 (Part-8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity, NTU, Max	IS:3025 (Part-10)	1	5	2.8	2.8
vi	Total Dissolved Solids, mg/l, Max	IS:3025 (Part-16)	500	2000	86	1160
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	8	120
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	24	310
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	0.36
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	0.09
xix	Magnesium (as Mg), mg/l, Max	IS:3025 (Part-46)	30	100	3.9	65.6
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	9.6	38.2
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	12.0	190.0
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	30	290
xxix	Total Hardness (as CaCO ₃), mg/l, Max	IS:3025 (Part-21)	200	600	36	570
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, 2020
Date of sampling : 08.10.2020
Date of Report : 06.02.2021
Report No : MES/WS/WRN/54A
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	7.98	7.54
iv	Taste	IS:3025 (Part-8)	Agreeable	Agreeable	Agreeable	Agreeable
v	Turbidity, NTU, Max	IS:3025 (Part-10)	1	5	1.5	2.3
vi	Total Dissolved Solids, mg/l, Max	IS:3025 (Part-16)	500	2000	1080	270
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	88	52
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	395	48
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	0.42	<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	43.7	1
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	11.6	4.60
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	84.2	16
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	520	175
xxix	Total Hardness (as CaCO ₃), mg/l, Max	IS:3025 (Part-21)	200	600	400	180
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
Samples Collected & Analysed by Mineral Engineering Services, Ballari

GW4 - Tayammakolla Bore water
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	: 09.04.2021																				
Date of Report	: 07.05.2021																				
Report No	: MES/SS/NRN/16																				
Code No.	Monitoring stations	Day			Night																
		L _{min}	L _{eq}	L _{max}	L _{min}	L _{eq}	L _{max}														
Bufferzone																					
N1	Dharmapura	38.0	52.9	57.0	34.0	41.8	46.5														
N2	Yeshwanthanagar	39.0	52.5	57.6	34.0	44.3	48.1														
N3	Ramgad village	37.0	53.3	58.3	34.0	44.7	47.4														
Corezone																					
N4	Core zone Near Mines office	0.0	44.7	63.0	34.0	42.6	46.5														
Permissible Limits of Ambient Noise Levels as per CPCB Guidelines <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Leq. Limit dB(A)</th> </tr> <tr> <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
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