

## **ENVIRONMENTAL MONITORING REPORT**



*at*

**Danapur Village, Hosapete Taluk,  
Vijayanagara District, PIN-583222, Karnataka.**

### **Stage - I**

### **MARCH - 2022**

**Prepared by**



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**PREFACE**

The industries should monitor environmental parameters as per the frequency and locations given in the CFE/CFO. And the same should be submitted on every month to the respective pollution control board.

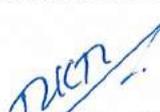
As part of the conditions and inherent concern on health of the employees and surroundings *M/s. BMM Ispat Ltd.*, as appointed *M/s. Global Environment & Mining Services, Hosapete*, to carry out the environmental pollution monitoring on AAQ Monitoring, Fugitive monitoring, Noise Monitoring, Water Analysis & Stack monitoring pollution and submit the same to the Pollution Control Board.

Accordingly, *M/s. Global Environment & Mining Services, Hosapete*, carried out the pollution monitoring as per the standard sampling methods prescribed by CPCB, for AAQ Monitoring, Fugitive monitoring within the plant, Stack Monitoring & Personal Dust Sampling as per the CFO. These monitoring has been carried out in a frequency as mentioned in the CFO and the same report is being submitted to the Board.

We sincerely thank to officials of *M/s. BMM Ispat Ltd.*, for their valuable co-ordination & support during the sampling and reporting.

**for GLOBAL Environment & Mining Services**

**Place: Hosapete**  
**Date:04.04.2022**

  
**K. Ramakrishna Reddy**  
**(Technical Manager)**



## 1.0 INTRODUCTION

M/s. BMM Ispat Ltd, (BMMIL) is a 2.0 million tons integrated steel plant, manufacturing steel with its state of art in advanced technology and protecting environment. It is committed produce quality product, in environmentally friendly technology. Adopting sufficient air pollution control equipment's, recycling and reusing all the water with 'Zero' discharge facility, generating valuable electric power with waste heat recovery boilers (WHRB) and resource optimizing and minimizing the energy needs through re-utilizing char for CFBC boilers.

M/s. BMM ISPAT Ltd., Presently operating the following units under Stage-I units (Manufacturing units coming under 2.0 MTPA integrated steel plant is monitored and are reported separately);

Sl.No.	Units	Capacity
1	Beneficiation Plant	1.3 MTPA
2	Pellet Plant	1.2 MTPA
3	Sponge Iron Division -1	2 x 100 TPD
4	Induction furnace (billets)	9000 tons/month
5	Rolling Mill (TMT rods)	9000 tons/month
6	Captive Power Plant	25 MW

The report includes environmental monitoring data collected at above site and its surrounding areas, for the month of **MARCH-2022**. The Parameters monitored are:

- ❖ Ambient Air Quality
- ❖ Fugitive Dust Level
- ❖ Stack Emission
- ❖ Ambient Noise Level
- ❖ Water Quality

## **2.0 SCOPE AND METHODOLOGY**

### **2.1 PREAMBLE**

The scope of the study and the present report covers the detailed characterization of the existing environmental status in and around the plant area for major environmental components viz. Ambient & work zone air quality, Fugitive Emission, Noise level and water quality & Stack Emission.

### **2.2 AMBIENT AIR QUALITY**

To assess the ambient air quality status, monitoring stations were identified 6 Location plant site. Work zone air monitoring stations were identified in the major work spots. Based on the production activities the parameters chosen for Ambient air quality. Were Particulate Matter PM10, Particulate Matter (size less than 2.5 $\mu$ m) PM2.5.

#### **2.2.1 PARTICULATE MATTER (PM10) (size less than 10 $\mu$ m).**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring and analysis of Particulate Matter PM10 in ambient air

**Reference Method:** IS 5182 Part 23 Method of Measurement of Air Pollution: Respirable Suspended Particulate Matter (PM10) cyclonic flow technique.

##### **Principle of the method**

Air is drawn through a size-selective inlet and through a 20.3X25.4 cm (8X10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM10 in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.

##### **Sampling**

Field Sampling - Tilt back the inlet and secure it according to manufacturer's instructions. Loosen the faceplate wing nuts and remove the faceplate. Remove the filter from its jacket and center it on the support screen with the rough side of the filter facing upwards. Replace the faceplate and tighten the wing nuts to secure the rubber gasket against the filter edge. Gently lower the inlet. For automatically flow-controlled units, record the designated flow rate on the data sheet. Record the reading of the elapsed time meter. The specified length of

sampling is commonly 8 hours or 24 hours. During this period, several reading (hourly) of flow rate should be taken. After the required time of sampling, record the flow meter reading, take out the filter media from the sampler, and put in a container or envelope.

### **Analysis**

**Filter inspection:** Inspect the filter for pin holes using a light table. Loose particles should be removed with a soft brush. Apply the filter identification number or a code to the filter if it is not a numbered. Condition the filter in conditioning room maintained within 20-30° C and 40-50% relative humidity or in an airtight desiccator for 24 hours. Take initial weight of the filter paper (Wi) before sampling. Condition the filter after sampling in conditioning room maintained within 20-30° C and 40-50% relative humidity or in an airtight desiccator for 24 hours. Take final weight of the filter paper (Wf).

### **2.2.2 Particulate Matter (PM<sub>2.5</sub>) (size less than 2.5µm).**

#### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring and analysis of Particulate Matter PM<sub>2.5</sub> in ambient air.

**Reference Method:** USEPA 2001 Method of Measurement of Air Pollution:

Particulate Matter (PM<sub>2.5</sub>) cyclonic flow technique.

#### **Principle**

An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e., cyclones or impactors) where the suspended particulate matter in the PM<sub>2.5</sub> size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the PM<sub>2.5</sub> size ranges divided by the actual volume of air sampled, and is expressed in µg/m<sup>3</sup>. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate. In addition, the microprocessor calculates the average temperatures and pressure, total volumetric flow for the entire sample run time and the coefficient of variation of the flow rate.

### 2.2.3 Sulphur Dioxide (SO<sub>2</sub>).

**Purpose:** The purpose of this protocol is to provide guidelines for monitoring and analysis of Sulphur dioxide in ambient air.

**Reference Method:** Modified West &Gaeke Method (IS 5182 Part 2 Method of Measurement of Air Pollution: Sulphur dioxide).

Sulphur dioxide from air is absorbed in a solution of potassium tetra chloromercurate (TCM). A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methyl sulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.

#### **Sampling**

Place 30 ml of absorbing solution in an impinger and sample for four hours at the flow rate of 1 L/min. After sampling measure the volume of sample and transfer to a sample storage bottle.

#### **Analysis**

Replace any water lost by evaporation during sampling by adding distilled water up to the calibration mark on the absorber. Mix thoroughly, pipette out 10 ml of the collected sample into a 25 ml volumetric flask. Add 1 ml 0.6% sulphamic acid and allow reacting for 10 minutes to destroy the nitrite resulting from oxides of nitrogen. Add 2 ml of 0.2% formaldehyde solution and 2 ml pararosaniline solution and make up to 25 ml with distilled water. Prepare a blank in the same manner using 10 ml of unexposed absorbing reagent. After a 30 min colour development interval and before 60 minutes, measure and record the absorbance of samples and reagent blank at 560 nm. Use distilled water; not the reagent blank, as the optical reference.

#### 2.2.4 **Nitrogen Di Oxide (NO<sub>2</sub>):**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring of nitrogen dioxide in ambient.

##### **Principle of the method**

Modified Jacobs & Hochheiser Method (IS 5182 Part 6 Methods for Measurement of Air Pollution: Oxides of nitrogen)

Ambient nitrogen dioxide (NO<sub>2</sub>) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO<sub>2</sub>) produced during sampling is determined calorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dye at 540 nm.

#### 2.2.5 **Ozone (Chemical method)**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring of ozone in ambient air.

##### **Principle of the method**

Micro-amounts of ozone and the oxidants liberate iodine when absorbed in a 1% solution of potassium iodine buffered at pH 6.8 + 0.2. The iodine is determined spectrophotometrically by measuring the absorption of tri-iodide ion at 352 nm.

##### **Sampling**

Place 10 ml of absorbing solution in a standard impinger and sample for one hour at the flow rate of 1 L/min. Do not expose the absorbing reagent to direct sunlight. After sampling measure the volume of sample and transfer to a sample storage bottle.

##### **Analysis**

If, appreciable evaporation of the absorbing solution occurs during sampling, add water to bring the liquid volume to 10 ml. Within 30 to 60 minutes after sample collection, read the absorbance in a cuvette at 352 nm against a reference cuvette containing distilled water. Measure the absorbance of the unexposed reagent and subtract the value from the absorbance of the sample.

### 2.2.6 Ammonia (NH<sub>3</sub>)

#### Purpose

The purpose of this protocol is to provide guidelines for monitoring of ammonia in ambient air.

#### Principle of the method

Indophenol method Ammonia in the atmosphere is collected by bubbling a measured volume of air through a dilute solution of sulphuric acid to form ammonium sulphate. The ammonium sulphate formed in the sample is analyzed calorimetrically by reaction with phenol and alkaline sodium hypochlorite to produce indophenol. The reaction is accelerated by the addition of Sodium Nitroprusside as catalyst.

#### Sampling

Place 10 ml of absorbing solution in an impinger and sample for one hour at the flow rate of 1 to 2 L/min. After sampling measure the volume of sample and transfer to a sample storage bottle

#### Analysis

Transfer contents of the sample bottle to a 25 ml glass stopper graduated cylinder. Maintain all the solutions and sample at 25° C. Add 2 ml buffer. Add 5 ml of working phenol solution, mix, and fill to about 22 ml. Add 2.5 ml of working hypochlorite solution and rapidly mix. Dilute to 25 ml, mix and store in the dark for 30 minutes to develop colour. Measure the absorbance of the solution at 630 nm on a spectrophotometer using 1 cm cells. Prepare a reagent blank and field blank and measure the absorbance as done in the analysis of samples.

### 2.2.7 Benzo(a)Pyrene

#### Purpose

The purpose of this protocol is to provide guidelines for monitoring of Benzo (a) Pyrene (BaP) in ambient air.

#### Principle of the Method

It is based on BIS method IS 5182 (Part 12):2004 and USEPA method (TO-13). This method is designed to collect particulate phase PAHs in ambient air and fugitive emissions and to determine individual PAH compounds using capillary gas chromatograph equipped with flame ionization detector. It is a high volume (1.2m<sup>3</sup>/min) sampling method capable of detecting sub.ng/m<sup>3</sup> concentration of

PAH in 24 hours sample (i.e., collected in 3 shifts of 8 hour each with 480 m<sup>3</sup> sampling volume of air)

### **Sampling**

24 hr. sampling using PM10 high volume sampler with 8 hourly samples using EPM 2000 glass fibre or equivalent filter.

### **Sample Processing**

**Extraction:** Filter papers (half of all the filters papers collected in a day) are cut into strips using scissors and transfer to 250 ml beaker. Add ~50 ml. of Toluene (GC/HPLC grade). These samples are extracted with toluene using ultra sonic bath for about 30 minutes. Repeat the procedure twice (50ml x 2 times) for complete extraction. Alternatively, sample can be extracted using Soxhlet extraction apparatus for about 8 hr. with Toluene and repeat it twice.

### **Filtration**

Filter the extracted samples with Whatman filter paper no.41 containing 2 gm of Anhydrous Sodium Sulphate (to remove moisture).

### **Sample injection**

Take 2 $\mu$ l of sample from the amber vial using standard gas tight syringe and inject in the Capillary GC-FID instrument for analysis. Record the resulting concentration of each PAH compound including B(a)P. A 10ng/ $\mu$ l concentration B(a)P or other PAH standards are to be injected in GC/FID instrument with every batch of samples. As a control Internal Standard of 10 ng/ $\mu$ l conc. is added to each sample prior to the analysis in case of internal calibration is used.

## **2.2.8 Benzene**

Samples collected through active sampling (sorbent tubes) are extracted or desorbed by conventional solvent (generally 1-5 ml of carbon disulphide) using ultrasonication for 15 min to remove analyte from the sorbent material. Desorbed samples are analyzed using gas chromatograph (GC) fitted with capillary column and flame ionization detector (FID). A single tube may provide enough samples to permit several analyses.

### **Principle of the Method**

IS 5182 (Part 11): 2006, The charcoal tubes are available in different sizes and contain varying amount of activated charcoal. The ambient air is sucked through the tube using a low flow sampler used for collection of BTX sample in a way that results in an enrichment of the relevant substances in the activated charcoal. Desorption of the adsorbed benzene is done using carbon disulphide (CS<sub>2</sub>). The

substances desorbed in the CS<sub>2</sub> are analyzed by capillary gas chromatography. A flame ionization detector (FID) is used for analysis while quantification is performed using the internal/external standard.

### **Gas Chromatograph**

Any suitable gas chromatograph with flame ionization detector (FID) with fused silica capillary columns having a length of 25 m or more, an internal diameter of 320  $\mu$ m or below and with a stationary phase film thickness less than 1.5  $\mu$ m as follows or equivalent may be recommended.

### **Sampling**

Selection of Sorbent Tube - Samples are collected in glass sampling tube filled with a activated charcoal (coconut shell), Chromo sorb 106 or other suitable adsorbent.

### **Analytical Procedure**

Samples collected through active sampling (sorbent tubes) are extracted or desorbed by conventional solvent (generally 1-5 ml of carbon disulphide) using ultrasonication for 15 min to remove analyte from the sorbent material. Desorbed samples are analyzed using gas chromatograph (GC) fitted with capillary column and flame ionization detector (FID). A single tube may provide enough samples to permit several analyses.

## **2.2.9 Carbon Monoxide (CO)**

### **Principle:**

Samples containing carbon monoxide in the range of 0 to 100 mg/l are analyzed on a non-dispersive infrared absorption gas analyser, namely, an electro-optical spectrophotometer with no spectral dispersion component. It may consist of a single or double source of infrared energy and one or more infrared detectors separated by an optical cell or cells through one or more of which the sample flows, whereby the specific spectral absorption of the component of interest is determined.

### **Non dispersive Infrared (NDIR) Gas Analyser**

The apparatus shall be constructed so as to be suitable for operating within the temperature range of 15°C to 40°C and in a relative humidity range of 0 to 90 percent. The apparatus shall embody facilities for the analysis of continuously applied sample or a discrete sample of volume of 2.0 litres. In the later case the purification train shall be of such a design and dead volume that 2.0 litre is

adequate for its proper flushing out. The apparatus shall include facilities for the visual inspection of results and also for their recording. The scale shall be divided into steps of 1.0 percent full scale division (fsd).

Though the basic instrument recommended is for (0 to 100) mg/l range, for samples of higher mg/l range the instrument may be used with proper dilution and conditioning of the samples.

#### **2.2.10 Lead (Pb), Nickel (Ni) & Arsenic (As)**

##### **Purpose**

The purpose of this protocol is to provide guidelines for monitoring of Lead (Pb), Nickel (Ni) & Arsenic (As) in ambient air.

##### **Principle of the method**

The Atomic Absorption Spectroscopy (AAS) technique makes use of absorption spectrometry to assess the concentration of an analyte in the sample. The method is based on active sampling using PM10 Respirable Dust Sampler and then sample analysis is done by atomic absorption spectrophotometer.

##### **Sampling procedure**

Tilt back the inlet and secure it according to manufacturer's instructions. Loosen the face-plate wing-nuts and remove the face plate. Remove the filter from its jacket and centre it on the support screen with the rough side of the filter facing upwards. Replace the face-plate and tighten the wing-nuts to secure the rubber gasket against the filter edge. Gently lower the inlet. For automatically flow-controlled units, record the designated flow rate on the data sheet. Record the reading of the elapsed time meter. The specified length of sampling is commonly 8 hours or 24 hours. During this period, several reading (hourly) of flow rate should be taken. After the required time of sampling, record the flow meter reading and take out the filter media from the sampler and put in a container or envelope.

#### **2.3 NOISE LEVELS**

##### **Measuring Equipment**

The measurements should be made with a sound level meter as specified in IS :9779-1981 The A-weighting network and fast response should be used. The sound level should be measured at the place and time of the annoyance.

### **Conditions of Measurement**

Ambient and work zone Noise level measurement was carried out using a sound level meter (Equinox-107) during day and night times. The measurements were carried out 1 m away from the source and 1 m away from the edge of the roads.

Outdoor measurements should be made at 1.2 to 1.5 m above the ground and, if practical, at least 3.5 m from walls, buildings or other sound reflecting structures. When circumstances indicate, measurements may be made at greater heights and closer to the wall (for example 0.5 m in front of an open window), provided this is specified and taken into consideration.

Indoor measurements should be made at a distance of at least 1 m from the walls, 1.2 to 1.5 m above the floor, and about 1.5 m from the window(s). In order to reduce disturbances from standing waves, the sound levels measured indoors should be averaged over 0.5 m of each of at least 3 positions. This is especially important when measuring low-frequency noise. The arithmetic average of the readings determines the value to be taken.

The statistical analysis can be based on analogue or digital recordings of the sound level. For estimating purposes, it may in some cases be sufficient to determine the statistical distribution by observing the sound level meter readings at intervals of time by a sampling technique,

The class intervals for the sound level must be chosen according to the character of the noise; in most cases an interval of 5 dB will be appropriate.

## **2.4 WATER SAMPLING**

### **Collection and Preservation of Samples**

Collection and preservation of water and wastewater samples; the general principles also apply to the sampling of solids or semisolid matrices.

Ensure that all sampling equipment is clean and quality-assured before use. Use sample containers that are clean and free of contaminants. Bake at 450°C all bottles to be used for organic analysis sampling.

**Record of sample shall be as follows:**

#### **General information**

- Sample identification number
- Location
- Sample collector
- Date and hour
- Sample type (Grab or composite)

### **Collection of Samples**

#### **Ground Water:**

**Grab samples:** Grab samples are single collected at a specific spot at a site over a short period of time (typically seconds or minutes).

#### **Surface water:**

**Composite Sampling:** Composite samples vertically over the depth of a water body in one location or horizontally along a specific water depth.

#### **Sewage treatment plant water.**

**Integrated Sampling:** For certain purposes, the information needed is best provided by analyzing mixtures of grab samples collected from different points simultaneously.

### **2.5 Fugitive Emission Monitoring**

Fugitive air quality was monitored 36 samples were collected from the analyzed for SPM analyzed by gravimetric method. Work Zone Air quality was monitored at all Plant area, and material handling area.

### **2.6 Stack monitoring method**

Stack Monitoring was Monitored 32 Samples Collected from Vayubodhan Stack sampler VSS 1 stack monitoring kit was used for drawing the flue gas. Sulphur dioxide and oxides of nitrogen in the flue gas were sampled by bubbling flue gas in 3% H<sub>2</sub>O<sub>2</sub> and 0.1N NaOH solution respectively and the analysis of the pollutants were done as per the Indian standard procedures prescribed by CPCB/BIS. Stack emission level was monitored as per the statutory requirement on twice in a month.

#### **Stack Emissions Monitoring Methodology**

##### **Pre-Sampling Activities**

Weigh the properly conditioned thimble/filter and place it into the clean, air tight Container. Designate appropriate label or ID No. to each thimble/filter container. Particulate matter emission of "Stack Monitoring – Material and Methodology for is kinetic Sampling.

Field activity starts with the collection of detailed information from the industry about the products, raw materials, fuels, and stack dimensions.

### **Traverse Point Calculation**

Calculate the traverse point and accordingly mark the distance from tip of the Nozzle, on Pitot tube and probe. Do not forget to add the collar length of port to the calculated traverses. For detailed calculation of "Stack Monitoring- Material and Methodology for isokinetic sampling.

### **Determination of Dust Concentration**

Determine the mass of dust collected in the thimble by difference i.e., weighing the thimble before and after the run. Dry the thimble in an oven for about 2 hours at 120°C prior to sampling. After sampling, cool, dry and again weigh the thimble along with dust maintaining the same condition as prior to sampling.

## **2.7 DATA ANALYSIS**

### **2.7.1 BUFFERZONE AMBIENT AIR QUALITY STATUS**

#### **Danapur Village (A1)**

At this location, average of PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub> values Average 75.23, 29.53, 12.06 & 14.28 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. And the results given in **Annexure-1**.

#### **Mariyammanahalli Village (A2)**

At this location, average of PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub> values Average 67.28, 26.89, 10.98 & 13.42 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. And the results given in **Annexure-2**.

#### **Hanumanahalli Village (A3)**

At this location, average of PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub> values Average 61.66, 24.14, 9.10 & 11.31 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-3**.

#### **Galemmanagudi Village (A4)**

At this location, average of PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub> values Average 64.76, 21.57, 8.96 & 11.20 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-4**.

#### **Gunda Village (A5)**

At this location, average of PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub> values Average 59.82, 22.37, 9.51 & 11.44 µg/m<sup>3</sup> respectively. All above the values were found within the Limits. Results given in **Annexure-5**.

### **Gunda Tanda Village (A6)**

At this location, average of PM10, PM2.5, SO2, NO2 values Average 56.25, 21.50, 8.51 & 10.38  $\mu\text{g}/\text{m}^3$  respectively. All above the values were found within the Limits. Results given in **Annexure-6**.

### **2.8 FUGITIVE DUST CONCENTRATION**

Fortnightly fugitive air quality was monitored all plant area SPM value minimum 412.39  $\mu\text{g}/\text{m}^3$ , maximum value 1878.39  $\mu\text{g}/\text{m}^3$ , and average value 1074.02  $\mu\text{g}/\text{m}^3$ . The Fugitive air quality 1<sup>st</sup> & 2<sup>nd</sup> Fortnight Results given in **Annexure-7 & Annexure-8**.

### **2.9 STACK MONITORING**

Stack emission level was monitored as per the statutory requirement on twice in month. Stack emission level was monitored all chimneys' PM values ( $\text{mg}/\text{Nm}^3$ ) 1st and 2nd Fort Night Minimum Value 17.60  $\text{mg}/\text{Nm}^3$ , Maximum Value 72.40  $\text{mg}/\text{Nm}^3$  & Average Value 30.73  $\text{mg}/\text{Nm}^3$ . The Stack Emission Results given in **Annexure-9 & Annexure-19**.

### **3.0 AMBIENT NOISE LEVEL MEASUREMENT**

Noise level was recorded at 30 locations each in Ambient and work zone area using Sound Level Meter (Equinox - EQ 107 Instrument / SL-4001) The Day & Night time noise level values were ranging between 44.2 to 72.8 dB (A) and 43.7 to 68.6 dB (A). The noise level status is given in **Annexure-20 & Annexure-21**.

**3.1** Water Sample Collected at 18 locations in side plant and surrounding nearest villages and nearest surface water Sample Collected every Month. The Water Analysis Test Report is given in **Annexure-22 & Annexure-32**.

### **3.2 CONCLUSION**

All the monitored Environmental parameters were found to be well within the statutory norms and the same are enclosed as follows.



GEMS



NABET

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TC-5323

**ANNEXURE-01**  
**GEMS-LD/TF/11/01****ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA**

Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
Customer Reference	: WO/ADMIN/FY22/R038
Sample collected by	: Global Environment & Mining Services
Discipline	: Chemical
Group	: Atmospheric Pollution
Sample Type	: Ambient Air Quality Monitoring
Particulars of Sample Collected	: Respirable Dust Sampler, FPS Sampler
Month	: <b>March-2022</b>
Location	: <b>A1-Danapur Village</b>
Duration of Monitoring	: 24 Hour
Report Issued Date	: <b>04.04.2022</b>
Report Number	: <b>ULR-TC532321000001803F</b>

**RESULTS**

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]					
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)					
Date of Sampling	Date of Sample Received	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD				
01.03.2022	02.03.2022	5904	74.18	<b>100</b>	29.18	<b>60</b>	9.39	<b>80</b>	12.13	<b>80</b>				
02.03.2022	03.03.2022	5925	79.19		32.79		11.59		14.65					
07.03.2022	08.03.2022	6020	84.96		35.64		15.07		17.16					
08.03.2022	09.03.2022	6036	76.41		29.22		12.41		14.42					
14.03.2022	15.03.2022	6206	67.30		25.57		11.25		13.50					
15.03.2022	16.03.2022	6230	78.54		29.84		14.61		16.25					
21.03.2022	22.03.2022	6334	59.73		19.90		8.93		10.87					
22.03.2022	23.03.2022	6352	81.52		34.12		13.22		15.22					
<b>Average</b>			<b>75.23</b>				<b>29.53</b>				<b>12.06</b>		<b>14.28</b>	

SL NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 196-C-21	PM2.5 / PM10 Sampler / 158-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

**Note:**

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# GLOBAL ENVIRONMENT & MINING SERVICES

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 Website : www.globalmining.in



TC-5323

ANNEXURE-02  
 GEMS-LD/TF/11/01

## ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
 Customer Reference : WO/ADMIN/FY22/RO38  
 Sample collected by : Global Environment & Mining Services  
 Discipline : Chemical  
 Group : Atmospheric Pollution  
 Sample Type : Ambient Air Quality Monitoring  
 Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
 Month : **March-2022**  
 Location : **A2 -Mariyammanahalli Village**  
 Duration of Monitoring : 24 Hour  
 Report Issued Date : **04.04.2022**  
 Report Number : **ULR-TC532321000001804F**

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Sample Received	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
01.03.2022	02.03.2022	5905	63.57	100	26.47	60	8.23	80	10.64	80
02.03.2022	03.03.2022	5926	72.32		29.90		10.90		13.73	
07.03.2022	08.03.2022	6021	59.16		18.89		7.42		9.15	
08.03.2022	09.03.2022	6037	66.08		26.56		10.55		12.36	
14.03.2022	15.03.2022	6207	75.26		30.71		13.33		15.22	
15.03.2022	16.03.2022	6231	57.93		23.23		11.01		14.42	
21.03.2022	22.03.2022	6335	68.55		27.81		12.29		15.33	
22.03.2022	23.03.2022	6353	75.39		31.56		14.14		16.48	
<b>Average</b>			<b>67.28</b>		<b>26.89</b>		<b>10.98</b>		<b>13.42</b>	

SL.NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 197-C-21	PM2.5 / PM10 Sampler / 159-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

**INFERENCE** As per NAAQMS Standards (2009),  
 Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
 Analysed By  
 Rukmini G  
 Chemist

*G. N. Mukunda Reddy*  
 Verified By  
 G. N. Mukunda Reddy  
 Chemist

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Website : www.globalmining.in



TC-5323

ANNEXURE-03  
GEMS-LD/TF/11/01

## ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : **March-2022**  
Location : **A3-Hanumanahalli Village**  
Duration of Monitoring : 24 Hour  
Report Issued Date : **04.04.2022**  
Report Number : **ULR-TC532321000001805F**

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]	
Reference Method			IS:5182:2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182:2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Sample Received	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
01.03.2022	02.03.2022	5906	68.39	100	27.09	60	10.09	80	12.24	80
02.03.2022	03.03.2022	5927	59.03		23.53		8.81		10.53	
07.03.2022	08.03.2022	6022	53.56		19.13		7.65		9.50	
08.03.2022	09.03.2022	6038	65.20		26.58		9.39		12.93	
14.03.2022	15.03.2022	6208	61.43		22.30		8.93		10.41	
15.03.2022	16.03.2022	6233	68.58		27.68		10.32		13.50	
21.03.2022	22.03.2022	6336	56.31		20.99		7.77		9.84	
22.03.2022	23.03.2022	6354	60.75		25.81		9.85		11.56	
<b>Average</b>			<b>61.66</b>				<b>24.14</b>			

SL NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 198-C-21	PM2.5 / PM10 Sampler / 160-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

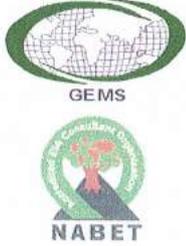
**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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Website : www.globalmining.in



TC-5323

ANNEXURE-04  
GEMS-LD/TF/11/01

## ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
Customer Reference : WO/ADMIN/FY22/R038  
Sample collected by : Global Environment & Mining Services  
Discipline : Chemical  
Group : Atmospheric Pollution  
Sample Type : Ambient Air Quality Monitoring  
Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
Month : **March-2022**  
Location : **A4-Galemmanagudi Village**  
Duration of Monitoring : 24 Hour  
Report Issue Date : **04.04.2022**  
Report Number : **ULR-TC532321000001820F**

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]					
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)					
Date of Sampling	Date of Sample Received	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD				
03.03.2022	04.03.2022	5941	68.50	100	24.10	60	9.97	80	12.70	80				
04.03.2022	05.03.2022	5957	59.31		21.68		8.23		10.64					
09.03.2022	10.03.2022	6052	72.78		23.51		9.85		11.67					
10.03.2022	11.03.2022	6085	60.89		18.74		7.88		10.41					
16.03.2022	17.03.2022	6249	55.19		23.90		6.49		8.70					
17.03.2022	18.03.2022	6275	67.22		17.04		9.51		11.56					
23.03.2022	24.03.2022	6366	71.77		24.15		11.36		13.73					
24.03.2022	25.03.2022	6380	62.40		19.41		8.35		10.18					
<b>Average</b>			<b>64.76</b>				<b>21.57</b>				<b>8.96</b>		<b>11.20</b>	

SL NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NI.	Enviro instruments / EI-133
3	Serial No	R.D.S. / 196-C-21	PM2.5 / PM10 Sampler / 158-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

**INFERENCE** As per NAAQMS Standards (2009),  
Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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 e-mail : gems\_hpt@yahoo.com  
 Website : www.globalmining.in



TC-5323

ANNEXURE-05  
 GEMS-LD/TF/11/01

## ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
 Customer Reference : WO/ADMIN/FY22/R038  
 Sample collected by : Global Environment & Mining Services  
 Discipline : Chemical  
 Group : Atmospheric Pollution  
 Sample Type : Ambient Air Quality Monitoring  
 Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
 Month : **March-2022**  
 Location : **A5-Gunda Village**  
 Duration of Monitoring : 24 Hour  
 Report Issue Date : **04.04.2022**  
 Report Number : **ULR-TC532321000001821F**

### RESULTS

Parameters			PM10 [µg/m <sup>3</sup> ]		PM2.5 [µg/m <sup>3</sup> ]		SO2 [µg/m <sup>3</sup> ]		NO2 [µg/m <sup>3</sup> ]	
Reference Method			IS:5182:2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182:2001 (Part-2) (RF-2017)		IS:5182: (Part-6) 2006 (RF-2017)	
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
03.03.2022	04.03.2022	5942	55.45	100	23.34	60	8.35	80	10.41	80
04.03.2022	05.03.2022	5958	61.06		27.48		10.67		12.82	
09.03.2022	10.03.2022	6053	53.54		18.33		7.88		9.73	
10.03.2022	11.03.2022	6086	64.44		22.15		9.04		11.21	
16.03.2022	17.03.2022	6250	69.92		26.38		11.36		13.16	
17.03.2022	18.03.2022	6276	53.76		20.69		9.28		11.44	
23.03.2022	24.03.2022	6367	57.47		17.65		8.70		10.53	
24.03.2022	25.03.2022	6381	62.93		22.90		10.78		12.24	
<b>Average</b>			<b>59.82</b>				<b>22.37</b>			

SL NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 197-C-21	PM2.5 / PM10 Sampler / 159-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

**INFERENCE** As per NAAQMS Standards (2009),  
 Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
 Analysed By  
 Rukmini G  
 Chemist

*G. N. Mukunda Reddy*  
 Verified By  
 G. N. Mukunda Reddy  
 Chemist

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 Website : www.globalmining.in



TC-5323

ANNEXURE-06  
 GEMS-LD/TF/11/01

## ANALYSIS REPORT OF AMBIENT AIR QUALITY DATA

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
 Customer Reference : WO/ADMIN/FY22/RO38  
 Sample collected by : Global Environment & Mining Services  
 Discipline : Chemical  
 Group : Atmospheric Pollution  
 Sample Type : Ambient Air Quality Monitoring  
 Particulars of Sample Collected : Respirable Dust Sampler, FPS Sampler  
 Month : **March-2022**  
 Location : **A6-Gunda Tanda Village**  
 Duration of Monitoring : 24 Hour  
 Report Issue Date : **04.04.2022**  
 Report Number : **ULR-TC532321000001822F**

### RESULTS

Parameters			PM <sub>10</sub> [µg/m <sup>3</sup> ]		PM <sub>2.5</sub> [µg/m <sup>3</sup> ]		SO <sub>2</sub> [µg/m <sup>3</sup> ]		NO <sub>2</sub> [µg/m <sup>3</sup> ]					
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS :5182: (Part-6) 2006 (RF-2017)					
Date of Sampling	Date of Received Sample	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD				
03.03.2022	04.03.2022	5943	60.47	100	22.55	60	8.70	80	10.76	80				
04.03.2022	05.03.2022	5959	54.49		18.28		7.30		9.15					
09.03.2022	10.03.2022	6054	49.07		24.09		7.88		10.07					
10.03.2022	11.03.2022	6087	45.14		15.71		6.72		8.81					
16.03.2022	17.03.2022	6251	57.09		26.05		9.74		10.99					
17.03.2022	18.03.2022	6277	63.13		22.82		10.55		12.93					
23.03.2022	24.03.2022	6368	59.06		19.77		7.65		9.27					
24.03.2022	25.03.2022	6382	61.57		22.74		9.51		11.10					
<b>Average</b>			<b>56.25</b>				<b>21.50</b>				<b>8.51</b>		<b>10.38</b>	

SL NO	INSTRUMENT DETAILS		
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / EI-142NL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 198-C-21	PM2.5 / PM10 Sampler / 160-K-20
4	Calibration Date	08.06.2021	07.03.2022
5	Calibration Due Date	07.06.2022	06.03.2023

**INFERENCE** As per NAAQMS Standards (2009),  
 Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
 Analysed By  
 Rukmini G  
 Chemist

*G. N. Mukunda Reddy*  
 Verified By  
 G. N. Mukunda Reddy  
 Chemist

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TC-5323

**ANNEXURE-07**  
**GEMS-LD/TF/11/01**

## FORTNIGHTLY FUGITIVE AIR QUALITY MONITORING DATA

- |    |                                 |   |
|----|---------------------------------|---|
| 1  | Name of the Industry            | : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District. |
| 2  | Customer Reference              | : WO/ADMIN/FY22/RO38  |
| 3  | Sample collected by             | : GLOBAL Environment & Mining Services, Hosapete                  |
| 4  | Particulars of sample collected | : RDS Sampler (GEMS-01, GEMS-02, GEMS-03, GEMS-04, GEMS-05)       |
| 5  | Month                           | : <b>March-2022 (1<sup>st</sup> Fort Night)</b>                   |
| 6  | Discipline                      | : Chemical  |
| 7  | Group                           | : Atmospheric Pollution   |
| 8  | Method adopted                  | : IS 5182 (Part 4): 1999 RA 2014                                  |
| 9  | Report Issued Date              | : <b>04.04.2022</b>   |
| 10 | Report Number                   | : <b>ULR-TC532321000001845F</b>                                   |

### RESULTS

Sl. NO.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ( $\mu\text{g}/\text{m}^3$ )	Standard
<b>I. Beneficiation Plant-1</b>						
1.	Main Canteen	5982	05.04.2022	06.03.2022	1076.01	2000
2.	Main Crusher	5983	05.04.2022	06.03.2022	1417.38	2000
3.	Iron Ore Screen	5984	05.04.2022	06.03.2022	1440.24	2000
<b>II. Pellet Plant-I</b>						
4.	Near Pellet Plant	5985	05.04.2022	06.03.2022	1866.93	2000
5.	TG Zero Meter	5986	05.04.2022	06.03.2022	994.97	2000
6.	Pellet Stock Yard	6015	07.03.2022	08.03.2022	1132.67	2000
<b>III. Sponge Iron Division-1</b>						
7.	Control Room SID-I	6016	07.03.2022	08.03.2022	1812.09	2000
8.	Near Product bin	6017	07.03.2022	08.03.2022	1320.16	2000
9.	Coal Feeding Area	6018	07.03.2022	08.03.2022	490.98	2000
<b>IV. Induction Furnace &amp; Rolling Mill</b>						
10.	IF Office	6019	07.03.2022	08.03.2022	1532.82	2000
11.	TMT Stock Yard	6032	08.03.2022	09.03.2022	885.23	2000
12.	RML Office	6033	08.03.2022	09.03.2022	874.52	2000
<b>V. Power Plant 25 MW</b>						
13.	25 MW ESP	6034	08.03.2022	09.03.2022	1152.78	2000
14.	25 MW ACC	6035	08.03.2022	09.03.2022	1116.76	2000
<b>VI. Site Services</b>						
15.	Main Stores	6048	09.03.2022	10.03.2022	412.89	2000
16.	Old Admin Building	6049	09.03.2022	10.03.2022	825.87	2000
17.	Labour Gate	6050	09.03.2022	10.03.2022	415.69	2000
18.	Safety Office	6051	09.03.2022	10.03.2022	622.20	2000

Note: SPM- Suspended Particulate matter. ( $\mu\text{g}/\text{m}^3$ ), INFERENCE: The Measured Values are within the limits.

SL NO	INSTRUMENT DETAILS	GEMS-01	GEMS-02	GEMS-03	GEMS-04	GEMS-05
1	Instrument Name	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler
2	Make & Model	Ecotech / AAS 217 BL	Ecotech / AAS 217 BL	Greentech Instruments/ GTI-151	Greentech Instruments/ GTI-151	Greentech Instruments/ GTI-151
3	Serial No	RDS / 14-A-141	RDS / 14-A-142	RDS / 193-DTH-2019	RDS / 244-DTL-2020	RDS / 263-OCT-2020
4	Calibration Date	06.04.2021	06.04.2021	06.04.2021	06.04.2021	06.04.2021
5	Calibration Due Date	05.04.2022	05.04.2022	05.04.2022	05.04.2022	05.04.2022

*Ruk. G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-08**  
**GEMS-LD/TF/11/01**

## FORTNIGHTLY FUGITIVE AIR QUALITY MONITORING DATA

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	RDS Sampler (GEMS-01, GEMS-02, GEMS-03, GEMS-04, GEMS-05)
5	Month	:	<b>March-2022 (2<sup>nd</sup> Fort Night)</b>
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Method adopted	:	IS 5182 (Part 4): 1999 RA 2014
9	Report Issued Date	:	<b>04.04.2022</b>
10	Report Number	:	<b>ULR-TC532321000001948F</b>

### RESULTS

Sl. NO.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ( $\mu\text{g}/\text{m}^3$ )	Standard
<b>I. Beneficiation Plant-1</b>						
1.	Main Canteen	6329	21.03.2022	22.03.2022	1878.39	2000
2.	Main Crusher	6330	21.03.2022	22.03.2022	800.33	2000
3.	Iron Ore Screen	6331	21.03.2022	22.03.2022	919.69	2000
<b>II. Pellet Plant-I</b>						
4.	Near Pellet Plant	6332	21.03.2022	22.03.2022	1661.73	2000
5.	TG Zero Meter	6333	21.03.2022	22.03.2022	1816.09	2000
6.	Pellet Stock Yard	6347	22.03.2022	23.03.2022	1383.32	2000
<b>III. Sponge Iron Division-1</b>						
7.	Control Room SID-I	6348	22.03.2022	23.03.2022	1750.17	2000
8.	Near Product bin	6349	22.03.2022	23.03.2022	1215.49	2000
9.	Coal Feeding Area	6350	22.03.2022	23.03.2022	424.22	2000
<b>IV. Induction Furnace &amp; Rolling Mill</b>						
10.	IF Office	6351	22.03.2022	23.03.2022	866.67	2000
11.	TMT Stock Yard	6362	23.03.2022	24.03.2022	767.01	2000
12.	RML Office	6363	23.03.2022	24.03.2022	813.95	2000
<b>V. Power Plant 25 MW</b>						
13.	25 MW ESP	6364	23.03.2022	24.03.2022	1189.17	2000
14.	25 MW ACC	6365	23.03.2022	24.03.2022	623.04	2000
<b>VI. Site Services</b>						
15.	Main Stores	6376	24.03.2022	25.03.2022	989.07	2000
16.	Old Admin Building	6377	24.03.2022	25.03.2022	1205.35	2000
17.	Labour Gate	6378	24.03.2022	25.03.2022	519.52	2000
18.	Safety Office (OHC)	6379	24.03.2022	25.03.2022	451.27	2000

Note: SPM - Suspended Particulate matter ( $\mu\text{g}/\text{m}^3$ ), INFERENCE: The Measured Values are within the limits.

Sl. NO	INSTRUMENT DETAILS	GEMS-01	GEMS-02	GEMS-03	GEMS-04	GEMS-05
1	Instrument Name	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler	Respirable Dust Sampler
2	Make & Model	Ecotech / AAS 217 BL	Ecotech / AAS 217 BL	Greentech Instruments/ GTI-151	Greentech Instruments/ GTI-151	Greentech Instruments/ GTI-151
3	Serial No	RDS / 14-A-141	RDS / 14-A-142	RDS / 193-DTH-2019	RDS / 244-DTL-2020	RDS / 263-OCT-2020
4	Calibration Date	06.04.2021	06.04.2021	06.04.2021	06.04.2021	06.04.2021
5	Calibration Due Date	05.04.2022	05.04.2022	05.04.2022	05.04.2022	05.04.2022

*Ruk. G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-09  
GEMS-LD/TF/10/01****Analysis Report of Stack Emission**

- |    |                                 |   |   |
|----|---------------------------------|---|---|
| 1  | Name of the Industry            | : | BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.                             |
| 2  | Customer Reference              | : | WO/ADMIN/FY22/RO38  |
| 3  | Sample collected by             | : | GLOBAL Environment & Mining Services, Hosapete  |
| 4  | Particulars of sample collected | : | Vayubodhan Stack sampler/ <b>VSS-1</b><br>Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b> |
| 5  | Instrument Details              | : | Calibration Date: 07.02.2022<br>Calibration Due Date: 06.02.2023                            |
| 6  | Discipline                      | : | Chemical  |
| 7  | Group                           | : | Atmospheric Pollution   |
| 8  | Sample Type                     | : | Stack Monitoring  |
| 9  | Sampling Location               | : | <b>Pellet Plant-1 ESP</b>   |
| 10 | Month of Sampling               | : | <b>March-2022</b>   |
| 11 | Date of Sample Received         | : | 02.03.2022 & 17.03.2022   |
| 12 | Date of Sample Analysis         | : | 03.03.2022 & 18.03.2022   |
| 13 | Date Sample Analysis Completion | : | 04.03.2022 & 19.03.2022   |
| 14 | Report Issued Date              | : | <b>04.04.2022</b>   |
| 15 | Report Number                   | : | <b>ULR-TC532321000001815F</b>   |

**Stack Details**

- |   |                      |                    |
|---|----------------------|--------------------|
| 1 | Fuel Used            | Coal & furnace oil |
| 2 | Stack Height (mtr)   | 100.0              |
| 3 | Stack Diameter (mtr) | 4.4                |

**Emission Details**

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				02.03.2022	17.03.2022	
	Date of Monitoring					
	Sample Code			5928	6298	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	33	34	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	119	125	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	7.54	7.37	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	412786	403480	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	313430	300394	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	36.60	72.40	150
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>	82.94	97.24	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	24.60	28.70	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.011	0.008	-

**Note:** NS- Not Specified, RA: Reaffirmed, **INFERENCE:** The Measured Values are within the limits.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-10**  
**GEMS-LD/TF/10/01**

## Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	: Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	: Chemical
7	Group	: Atmospheric Pollution
8	Sample Type	: Stack Monitoring
9	Sampling Location	: <b>2X100 TPD Sponge iron plant ESP</b>
10	Month of Sampling	: <b>March-2022</b>
11	Date of Sample Received	: 09.03.2022 & 23.03.2022
12	Date of Sample Analysis	: 10.03.2022 & 24.03.2022
13	Date Sample Analysis Completion	: 11.03.2022 & 25.03.2022
14	Report Issued Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001868F</b>

### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	60.0
3	Stack Diameter (mtr)	2.00

### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				09.03.2022	23.03.2022	
	Date of Monitoring					
	Sample Code			6055	6369	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	33	33	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	168	179	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	8.21	8.46	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	92865	95693	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	62422	62724	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	39.60	34.90	150
7	Sulphur Dioxide	IS: 11255 (Part 2); (RA 2014)	mg/Nm <sup>3</sup>	94.38	82.94	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	14.35	10.25	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.082	0.075	-

**Note:** NS- Not Specified. RA: Reaffirmed, **INFERENCE:** The Measured Values are within the limits.

*Ruk. G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-11**  
**GEMS-LD/TF/10/01**

## Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Sampling Location	:	<b>Induction Furnace1&amp; 2</b>
10	Month of Sampling	:	<b>March-2022</b>
11	Date of Sample Received	:	-
12	Date of Sample Analysis	:	-
13	Date Sample Analysis Completion	:	-
14	Report Issued Date	:	<b>04.04.2022</b>
15	Report Number	:	-

### Stack Details

1	Fuel Used	Electric Power
2	Stack Height (mtr)	30.0
3	Stack Diameter (mtr)	1.0

### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				-	-	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	-	-	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	-	-	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	-	-	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	-	-	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	<b>Under Maintenance</b>		-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>			<b>100</b>
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>			<b>NS</b>
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>			<b>NS</b>
9	Carbon Monoxide	GEMS/SOP/69	%	-	-	-

**Note:** NS- Not Specified, RA: Reaffirmed, **INFERENCE:** The Measured Values are within the limits.

  
**Verified By**  
**G. N. Mukunda Reddy**  
 Chemist



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**ANNEXURE-12**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Sampling Location	:	<b>Rolling mill reheating furnace</b>
10	Month of Sampling	:	<b>March-2022</b>
11	Date of Sample Received	:	05.03.2022 & 24.03.2022
12	Date of Sample Analysis	:	06.03.2022 & 25.03.2022
13	Date Sample Analysis Completion	:	07.03.2022 & 26.03.2022
14	Report Issued Date	:	<b>04.04.2022</b>
15	Report Number	:	<b>ULR-TC532321000001710F</b>

#### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	30.0
3	Stack Diameter (mtr)	0.8

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				05.03.2022	24.03.2022	
	Date of Monitoring					
	Sample Code			5987	6383	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	33	34	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	372	381	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	9.01	9.24	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr	16306	16722	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr	7543	7569	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>	26.10	38.70	100
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>	197.34	163.02	270
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>	43.05	36.90	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.027	0.018	-

**Note:** NS- Not Specified, RA: Reaffirmed, **INFERENCE:** The Measured Values are within the limits.

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-13**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Sampling Location	:	<b>AFBC Boiler ESP (25 MW Power Plant)</b>
10	Month of Sampling	:	<b>March-2022</b>
11	Date of Sample Received	:	-
12	Date of Sample Analysis	:	-
13	Date Sample Analysis Completion	:	-
14	Report Issued Date	:	<b>04.04.2022</b>
15	Report Number	:	-

#### Stack Details

1	Fuel Used	Coal
2	Stack Height (mtr)	65.0
3	Stack Diameter (mtr)	2.5

#### Emission Details

Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 <sup>st</sup> Fort Night	2 <sup>nd</sup> Fort Night	
				-	-	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	<b>Shutdown</b>	-	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C		-	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec		-	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m <sup>3</sup> /hr		-	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm <sup>3</sup> /hr		-	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm <sup>3</sup>		<b>50</b>	
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm <sup>3</sup>		<b>600</b>	
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm <sup>3</sup>		<b>300</b>	
9	Carbon Monoxide	GEMS/SOP/69	%		-	-

**Note:** NS- Not Specified. RA: Reaffirmed,

  
**Verified By**  
**G. N. Mukunda Reddy**  
 Chemist



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# GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

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TC-5323

**ANNEXURE-14**  
**GEMS-LD/TF/10/01**

## Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Date of Analysis Completion	:	<b>March-2022 (1<sup>st</sup> Fort Night)</b>
10	Date of Sample Received	:	11.03.2022
11	Date of Sample Analysis	:	12.03.2022
12	Date Sample Analysis Completion	:	13.03.2022
13	Report Issued Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001900F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>Beneficiation Plant</b>											
1	Ore Crushing & Screening	11.03.2022	6124	---	34	41	5.32	30	0.40	33.7	50
2	Ore Fines Hopper Bottom	11.03.2022	6125	---	35	42	5.51	30	0.40	23.0	50
3	Main Crusher (RMHS)	11.03.2022	6126	---	32	40	6.30	25	0.50	25.3	50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
1	Ore Crushing & Screening	2407	2272	-
2	Ore Fines Hopper Bottom	2493	2344	-
3	Main Crusher (RMHS)	4454	4228	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

**Note:**

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TC-5323

**ANNEXURE-15**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Date of Analysis Completion	:	<b>March-2022 (1<sup>st</sup> Fort Night)</b>
10	Date of Sample Received	:	02.03.2022 & 14.03.2022
11	Date of Sample Analysis	:	03.03.2022 & 15.03.2022
12	Date Sample Analysis Completion	:	04.03.2022 & 16.03.2022
13	Report Issued Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001807F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>Pellet Plant</b>											
4	Mixed Area	14.03.2022	6209	---	33	38	5.32	3.0	0.30	26.7	50
5	Pellet Discharge Point	02.03.2022	5908	---	34	52	7.60	7.0	0.50	32.8	50
6	Product Transfer Point	14.03.2022	6210	---	34	41	5.46	30	1.20	22.7	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
4	Mixed Area	1354	1296	-
5	Pellet Discharge Point	5373	4915	-
6	Product Transfer Point	22233	20992	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-16**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Date of Analysis Completion	:	<b>March-2022 (1<sup>st</sup> Fort Night)</b>
10	Date of Sample Received	:	10.03.2022 & 14.03.2022
11	Date of Sample Analysis	:	11.03.2022 & 15.03.2022
12	Date Sample Analysis Completion	:	12.03.2022 & 16.03.2022
13	Report Issued Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001881F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>2 X 100 TPD Sponge Iron Kiln 1 &amp; 2</b>											
7	Cooler Discharge -1	14.03.2022	6211	---	35	40	5.33	30	1.20	28.1	50
8	Cooler Discharge -2	10.03.2022	6088	---	33	41	5.17	30	1.20	46.2	50
9	Coal Crusher	-	-	---	-	-	-	30	1.20	-	50
10	Transfer House-PSB	10.03.2022	6089	---	34	42	5.58	30	1.20	26.7	50
11	Intermediate Bin	10.03.2022	6090	---	34	43	5.54	30	1.20	34.7	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
7	Cooler Discharge -1	21704	20536	-
8	Cooler Discharge -2	21052	19959	-
9	Coal Crusher	-	-	-
10	Transfer House	22722	21411	-
11	Intermediate Bin	22559	21221	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-17**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Date of Analysis Completion	:	<b>March-2022 (2<sup>ND</sup> Fort Night)</b>
10	Date of Sample Received	:	25.03.2022 & 26.03.2022
11	Date of Sample Analysis	:	26.03.2022 & 28.03.2022
12	Date Sample Analysis Completion	:	28.03.2022 & 29.03.2022
13	Report Issued Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001956F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>Beneficiation Plant</b>											
1	Ore Crushing & Screening	25.03.2022	6400	---	35	38	5.19	30	0.40	27.6	50
2	Ore Fines Hopper Bottom	26.03.2022	6410	---	32	39	5.40	30	0.40	24.8	50
3	Main Crusher (RMHS)	26.03.2022	6411	---	33	41	6.37	25	0.50	17.6	50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
1	Ore Crushing & Screening	2348	2232	-
2	Ore Fines Hopper Bottom	2443	2334	-
3	Main Crusher (RMHS)	4503	4269	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-18**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	:	Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Sample Type	:	Stack Monitoring
9	Date of Analysis Completion	:	<b>March-2022 (2<sup>ND</sup> Fort Night)</b>
10	Date of Sample Received	:	17.03.2022 & 18.03.2022
11	Date of Sample Analysis	:	18.03.2022 & 19.03.2022
12	Date Sample Analysis Completion	:	19.03.2022 & 21.03.2022
13	Report Issued Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001939F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>Pellet Plant</b>											
4	Mixed Area	18.03.2022	6305	---	36	41	5.35	3.0	0.30	21.9	50
5	Pellet Discharge Point	17.03.2022	6279	---	35	48	6.78	7.0	0.50	26.8	50
6	Product Transfer Point	18.03.2022	6306	---	36	42	5.50	30	1.20	18.3	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
4	Mixed Area	1362	1281	-
5	Pellet Discharge Point	4793	4429	-
6	Product Transfer Point	22396	20992	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

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TC-5323

**ANNEXURE-19**  
**GEMS-LD/TF/10/01**

### Analysis Report of Stack Emission

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	: Vayubodhan Stack sampler/ <b>VSS-1</b> Sl. No: Stack Monitoring Kit/ <b>304-DTB-2007</b>
5	Instrument Details	: Calibration Date: 07.02.2022 Calibration Due Date: 06.02.2023
6	Discipline	: Chemical
7	Group	: Atmospheric Pollution
8	Sample Type	: Stack Monitoring
9	Date of Analysis Completion	: <b>March-2022 (2<sup>ND</sup> Fort Night)</b>
10	Date of Sample Received	: 23.03.2022 & 24.03.2022
11	Date of Sample Analysis	: 24.03.2022 & 25.03.2022
12	Date Sample Analysis Completion	: 25.03.2022 & 26.03.2022
13	Report Issued Date	: <b>04.04.2022</b>
14	Report Number	: <b>ULR-TC532321000001768F</b>

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	Ta °C	TS °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm <sup>3</sup>	KSPCB Std mg/Nm <sup>3</sup>
<b>Chimneys attached to Bag Filter (De dusting Units)</b>											
<b>2 X 100 TPD Sponge Iron Kiln 1 &amp; 2</b>											
7	Cooler Discharge -1	23.03.2022	6370	---	35	42	5.29	30	1.20	19.5	50
8	Cooler Discharge -2	23.03.2022	6371	---	36	44	5.11	30	1.20	34.0	50
9	Coal Crusher	-	-	---	-	-	-	30	1.20	-	50
10	Transfer House-PSB	24.03.2022	6384	---	34	39	5.48	30	1.20	21.5	50
11	Intermediate Bin	24.03.2022	6385	---	33	40	5.62	30	1.20	38.8	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m <sup>3</sup> /hr	Gas flow rate at NTP Nm <sup>3</sup> /hr	KSPCB Std
7	Cooler Discharge -1	21541	20247	-
8	Cooler Discharge -2	20808	19427	-
9	Coal Crusher	-	-	-
10	Transfer House	22315	21145	-
11	Intermediate Bin	22885	21610	-

Parameter	Protocol
Particulate Matter (mg/Nm <sup>3</sup> )	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

*Ruk. G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-20**  
**GEMS-LD/TF/08/01**

### AMBIENT NOISE LEVEL MONITORING REPORT

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
 Customer Reference : WO/ADMIN/FY22/RO38  
 Sample collected by : Global Environment & Mining Services  
 Discipline : Chemical  
 Group : Atmospheric Pollution  
 Sample Type : Noise Level Monitoring  
 Particulars of Sample Collected : Equinox-107  
 Sl. No: 110706604  
 Instrument Details : Calibration Date: 25.05.2021  
 Calibration Due Date: 24.05.2022  
 Month : **March-2022**  
 Report Issue Date : **04.04.2022**  
 Method Adopted : IS 9989-1981 Reaffirmed 2014  
 Report No : **ULR-TC532321000001869F**

Sl. No	Location	Date of Monitoring	Noise Level dB (A)					
			Day Time		Standard	Night Time		Standard
			Min	Max		Min	Max	
1	Main Gate	01.03.2022	52.7	62.3	75	50.9	61.5	70
2	Near ATM	01.03.2022	48.9	59.8	75	47.1	57.3	70
3	Transit House	02.03.2022	47.2	56.7	75	45.3	54.6	70
4	CAAQMS Station	02.03.2022	45.1	59.2	75	44.3	58.5	70
5	Gunda Road	03.03.2022	44.8	56.4	75	46.1	54.2	70
6	Gunda Railway Station	03.03.2022	56.8	63.8	75	54.6	62.5	70
7	Bagging Shed	04.03.2022	59.0	67.8	75	55.9	64.1	70
8	Railway Siding	04.03.2022	63.8	71.5	75	57.3	66.7	70
9	4th Gate	05.03.2022	48.6	58.2	75	47.6	55.9	70
10	Bricks Plant	05.03.2022	63.3	72.8	75	58.2	68.6	70
11	Kempuhalla (Wagon Tippler)	07.03.2022	53.2	62.0	75	49.5	60.1	70
12	Danapura Bridge	07.03.2022	62.0	70.2	75	57.3	66.5	70
13	2nd Gate	08.03.2022	55.8	65.3	75	52.7	62.8	70
14	Project Store	08.03.2022	44.2	59.6	75	45.9	56.1	70
15	Dispatch (Truck Parking Area)	08.03.2022	55.0	63.8	75	51.8	59.7	70

**INFERENCE** As per CPCB Standards,  
**Report Status: - Measured Values for the above parameters are within the limit.**

Verified By  
 G. N. Mukunda Reddy  
 Chemist

**Note:**

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
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# GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

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TC-5323

**ANNEXURE-21**  
**GEMS-LD/TF/08/01**

## AMBIENT NOISE LEVEL MONITORING REPORT

Name of the Industry : BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.  
 Customer Reference : WO/ADMIN/FY22/R038  
 Sample collected by : Global Environment & Mining Services  
 Discipline : Chemical  
 Group : Atmospheric Pollution  
 Sample Type : Noise Level Monitoring  
 Particulars of Sample Collected : Equinox-107  
 Sl. No: 110706604  
 Instrument Details : Calibration Date: 25.05.2021  
 Calibration Due Date: 24.05.2022  
 Month : **March-2022**  
 Report Issue Date : **04.04.2022**  
 Method Adopted : IS 9989-1981 Reaffirmed 2014  
 Report No : **ULR-TC532321000001949F**

Sl. No	Location	Date of Monitoring	Noise Level dB (A)					
			Day Time		Standard	Night Time		Standard
			Min	Max		Min	Max	
1	Main Gate	16.03.2022	51.7	64.9	75	46.9	57.2	70
2	Near ATM	16.03.2022	48.2	62.3	75	43.8	59.7	70
3	Transit House	17.03.2022	46.6	64.8	75	44.1	61.3	70
4	CAAQMS Station	17.03.2022	46.9	65.5	75	43.7	63.1	70
5	Gunda Road	18.03.2022	45.1	57.2	75	44.9	55.8	70
6	Gunda Railway Station	18.03.2022	53.0	63.6	75	49.4	61.2	70
7	Bagging Shed	19.03.2022	59.2	69.4	75	54.8	67.5	70
8	Railway Siding	19.03.2022	64.0	71.8	75	58.6	65.4	70
9	4th Gate	21.03.2022	48.3	59.2	75	45.2	57.3	70
10	Bricks Plant	21.03.2022	63.2	70.9	75	57.7	66.8	70
11	Kempuhalla (Wagon Tippler)	22.03.2022	52.8	59.2	75	50.1	56.4	70
12	Danapura Bridge	22.03.2022	64.5	71.7	75	56.3	65.7	70
13	2nd Gate	23.03.2022	54.8	69.2	75	49.5	58.8	70
14	Project Store	23.03.2022	47.6	58.4	75	46.8	55.6	70
15	Dispatch (Truck Parking Area)	23.03.2022	54.1	66.9	75	51.3	60.9	70

**INFERENCE** As per CPCB Standards,  
**Report Status: - Measured Values for the above parameters are within the limit.**

Verified By  
 G. N. Mukunda Reddy  
 Chemist

**Note:**

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Website : www.globalmining.in



TC-5323

**ANNEXURE-22**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5989</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001847F</b>

### Results

Sl. No	Parameters	Protocol	Unit	Danapur Village (GW1)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	<b>7.79</b>	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	<b>2900</b>	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	<b>1812</b>	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	<b>0.6</b>	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<b>&lt;1.0</b>	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	<b>163.24</b>	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	<b>Nil</b>	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	<b>567.65</b>	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	<b>0.0</b>	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	<b>107.80</b>	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	<b>73.31</b>	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	<b>571.20</b>	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	<b>440.10</b>	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	<b>0.27</b>	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	<b>21.52</b>	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	<b>540.10</b>	200	600

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TC-5323

### ANNEXURE-22

17.	Acidity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.21	0.30	NR
19.	Chromium as Cr	APHA 23 <sup>rd</sup> Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.341	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.153	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

Note: **GW1:** Danapur Village, **NR**-No relaxation. **Ab**-Absent.

#### INFERENCE

As per Standards IS: 10500:2012

Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

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ANNEXURE-22  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Ground Water
9	Sample Code	:	<b>5989</b>
10	Date of Sampling	:	05.03.2022
11	Sample Received	:	05.03.2022
12	Date of Analysis	:	05.03.2022
13	Date of Analysis Completion	:	12.03.2022
14	Report Issue Date	:	<b>04.04.2022</b>

### Results

Sl. No	Parameters	Protocol	Unit	Danapur Village (GW1)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2 -7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3 -20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-

Note: Ab: Absent, NR: No Relaxation

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-23**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

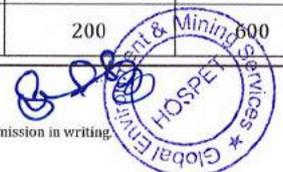
1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5990</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001848F</b>

### Results

Sl. No	Parameters	Protocol	Unit	Hanumanahalli Village (GW2)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	<b>7.40</b>	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	<b>1610</b>	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	<b>1046</b>	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	<b>0.2</b>	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<b>&lt;1.0</b>	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	<b>98.0</b>	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	<b>BDL</b>	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	<b>198.20</b>	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	<b>0.0</b>	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	<b>180.50</b>	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	<b>10.29</b>	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	<b>493.60</b>	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	<b>222.90</b>	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	<b>0.70</b>	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	<b>14.68</b>	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	<b>327.60</b>	200	600

**Note:**

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TC-5323

### ANNEXURE-23

17.	Acidity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.17	0.30	NR
19.	Chromium as Cr	APHA 23 <sup>rd</sup> Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.287	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.064	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

**Note: GW2:** Hanumanahalli Village. **NR**-No relaxation. **Ab**-Absent.

#### INFERENCE

As per Standards IS: 10500:2012

Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

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Website : www.globalmining.in

ANNEXURE-23  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Ground Water
9	Sample Code	:	5990
10	Date of Sampling	:	05.03.2022
11	Sample Received	:	05.03.2022
12	Date of Analysis	:	05.03.2022
13	Date of Analysis Completion	:	12.03.2022
14	Report Issue Date	:	04.04.2022

### Results

Sl. No	Parameters	Protocol	Unit	Hanumanahalli Village (GW2)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2 -7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3 -20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

Note: Ab: Absent, NR: No Relaxation

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
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# GLOBAL ENVIRONMENT & MINING SERVICES

(Consulting Engineers, Mine designers, Geologist & Surveyors)

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TC-5323

**ANNEXURE-24**  
**GEMS-LD/TF/23/01**

## Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5991</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001849F</b>

### Results

Sl. No	Parameters	Protocol	Unit	Galemmana Gudi Village (GW3)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	<b>7.41</b>	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	<b>2600</b>	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	<b>1672</b>	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	<b>0.3</b>	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<b>&lt;1.0</b>	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	<b>140.90</b>	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	<b>Nil</b>	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	<b>441.85</b>	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	<b>0.0</b>	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	<b>178.10</b>	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	<b>28.16</b>	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	<b>561.20</b>	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	<b>381.40</b>	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	<b>1.10</b>	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	<b>35.26</b>	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	<b>534.60</b>	200	600

**Note:**

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
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ANNEXURE-24

17.	Acidity as CaCO <sub>3</sub>	APHA 22nd Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23rd Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.19	0.30	NR
19.	Chromium as Cr	APHA 23rd Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.275	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.108	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

**Note: GW3: GalemmanaGudi Village. NR-No relaxation. Ab-Absent.**

**INFERENCE**

**As per Standards IS: 10500:2012**

**Report Status: - Measured Values for the above parameters are within the limit.**

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



**Note:**

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GEMS



NABET

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ANNEXURE-24  
GEMS-LD/TF/23/01**Analysis Report of Water Quality Data**

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Ground Water
9	Sample Code	:	<b>5991</b>
10	Date of Sampling	:	05.03.2022
11	Sample Received	:	05.03.2022
12	Date of Analysis	:	05.03.2022
13	Date of Analysis Completion	:	12.03.2022
14	Report Issue Date	:	<b>04.04.2022</b>

**Results**

Sl. No	Parameters	Protocol	Unit	Galemmana Gudi Village (GW3)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2 -7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3 -20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-

**Note: Ab: Absent, NR: No Relaxation**

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-25**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5992</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001850F</b>

### Results

Sl. No	Parameters	Protocol	Unit	Mariyammana Halli Village (GW4)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	<b>7.86</b>	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	<b>2700</b>	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	<b>1720</b>	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	<b>0.8</b>	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<b>Nil</b>	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	<b>171.0</b>	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	<b>Nil</b>	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	<b>481.90</b>	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	<b>0.0</b>	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	<b>90.68</b>	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	<b>59.89</b>	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	<b>473.20</b>	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	<b>322.70</b>	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	<b>0.62</b>	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	<b>24.48</b>	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	<b>502.50</b>	200	600

**Note:**

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TC-5323

### ANNEXURE-25

17.	Acidity as CaCO <sub>3</sub>	APHA 22nd Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23rd Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.13	0.30	NR
19.	Chromium as Cr	APHA 23rd Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.309	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.128	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

**Note: GW4: Mariyammana Halli Village. NR-No relaxation. Ab-Absent.**

#### INFERENCE

As per Standards IS: 10500:2012

Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

#### Note:

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ANNEXURE-25  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Grab Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	Ground Water
9	Sample Code	:	<b>5992</b>
10	Date of Sampling	:	05.03.2022
11	Sample Received	:	05.03.2022
12	Date of Analysis	:	05.03.2022
13	Date of Analysis Completion	:	12.03.2022
14	Report Issue Date	:	<b>04.04.2022</b>

### Results

Sl. No	Parameters	Protocol	Unit	Mariyammana Halli Village (GW4)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2 -7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3 -20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

**Note: Ab: Absent, NR: No Relaxation**

*Rukmini G.*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-26**  
**GEMS-LD/TF/23/01**

## Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5993</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001851F</b>

### Results

Sl. No	Parameters	Protocol	Unit	Transit House (GW5)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.91	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	1400	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	912	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.3	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	Nil	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	170.0	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	285.40	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	93.90	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	20.76	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	320.20	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	68.40	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.72	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	11.54	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	470.30	200	600

**Note:**

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TC-5323

### ANNEXURE-26

17.	Acidity as CaCO <sub>3</sub>	APHA 22nd Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23rd Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.22	0.30	NR
19.	Cromium as Cr	APHA 23rd Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.286	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.079	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

**Note: GW5:** Transit House (BW). **NR**-No relaxation. **Ab**-Absent.

#### INFERENCE

As per Standards IS: 10500:2012

Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



#### Note:

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## GLOBAL ENVIRONMENT & MINING SERVICES

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ANNEXURE-26  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5993</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>

### Results

Sl. No	Parameters	Protocol	Unit	Transit House (GW5)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2 -7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3 -20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

Note: Ab: Absent, NR: No Relaxation

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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TC-5323

**ANNEXURE-27**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: RO Drinking Water
9	Sample Code	: <b>5996</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>
15	Report Number	: <b>ULR-TC532321000001854F</b>

### Results

Sl. No	Parameters	Protocol	Unit	RO Drinking Water	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	<b>7.94</b>	6.5 to 8.5	NR
2.	Conductivity	APHA 23 <sup>rd</sup> Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	<b>80</b>	-	-
3.	Total Dissolved Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	<b>48</b>	500	2000
4.	Turbidity (NTU)	APHA 23 <sup>rd</sup> Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	<b>0.0</b>	1	5
5.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<b>Nil</b>	-	-
6.	Sulphate as SO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 -SO <sub>4</sub> <sup>2-</sup> E (Page No. 4-199 to 4-200)	mg/L	<b>7.75</b>	200	400
7.	Phosphorus as P	APHA 23 <sup>rd</sup> Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	<b>Nil</b>	-	-
8.	Sodium as Na	APHA 23 <sup>rd</sup> Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	<b>9.47</b>	-	-
9.	Potassium as K	APHA 23 <sup>rd</sup> Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	<b>0.0</b>	-	-
10.	Calcium as Ca	APHA 23 <sup>rd</sup> Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	<b>4.90</b>	75	200
11.	Magnesium as Mg	APHA 23 <sup>rd</sup> Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	<b>3.46</b>	30	100
12.	Total Hardness as CaCO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	<b>26.50</b>	200	600
13.	Chloride as Cl	APHA 23 <sup>rd</sup> Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	<b>6.84</b>	250	1000
14.	Fluoride as F	APHA 23 <sup>rd</sup> Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	<b>0.12</b>	1	1.5
15.	Nitrate Nitrogen as NO <sub>3</sub>	APHA 23 <sup>rd</sup> Edition 2017 4500 NO <sub>3</sub> E (Pg. No.4-131 to 4-132)	mg/L	<b>0.81</b>	45	NR
16.	Total Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	<b>28.10</b>	200	600

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TC-5323

### ANNEXURE-27

17.	Acidity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition 2017 2320 B (Pg. No.2-34 to 2-36)	mg/L	Nil	-	-
18.	Total Iron as Fe	APHA 23 <sup>rd</sup> Edition 2017 3500 Fe-B. (Pg. No.3-80 to 3-82)	mg/L	0.10	0.30	NR
19.	Cromium as Cr	APHA 23 <sup>rd</sup> Edition 2017 3500 Cr-B. (Pg. No.3-71 to 3-72)	mg/L	<0.05	0.05	NR
20.	Nickel as Ni	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.243	0.05	1.50
23.	Zinc as Zn	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.055	5	15
24.	Lead as Pb	APHA 23 <sup>rd</sup> Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 <sup>rd</sup> Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

**Note: W6:** RO Drinking Water. **NR**-No relaxation. **Ab**-Absent.

#### INFERENCE

As per Standards IS: 10500:2012

Report Status: - Measured Values for the above parameters are within the limit.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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ANNEXURE-27  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Grab Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: Ground Water
9	Sample Code	: <b>5996</b>
10	Date of Sampling	: 05.03.2022
11	Sample Received	: 05.03.2022
12	Date of Analysis	: 05.03.2022
13	Date of Analysis Completion	: 12.03.2022
14	Report Issue Date	: <b>04.04.2022</b>

### Results

Sl. No	Parameters	Protocol	Unit	RO Drinking Water	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	Color	APHA-23RD Edition-2120 C (Pg No. 2-7 to 2-8)	Hazen	<5	5	15
2.	Cadmium as Cd	APHA-23RD Edition-3111 -B (Pg No.3-20 to 3-21)	mg/L	<0.001	0.003	NR
3.	Total Coli form count	APHA 23 <sup>rd</sup> Edition 9222-B (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-
4.	Escherichia coli count	APHA 23 <sup>rd</sup> Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	<b>Ab</b>	Shall not be detectable in any 100ml sample	-

Note: Ab: Absent, NR: No Relaxation

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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**ANNEXURE-28**  
**GEMS-LD/TF/23/01**

### Analysis Report of Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/RO38
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	<b>Sewage Treatment Plant (Outlet)</b>
9	Date of Sampling	:	05.03.2022
10	Sample Received	:	05.03.2022
11	Date of Analysis	:	05.03.2022
12	Date of Analysis Completion	:	12.03.2022
13	Report Issue Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001855F</b>

Sl. No.	Parameters	Protocol	Unit	Results			As per KSPCB Std	
				STP 45 KLD	STP-1 90 KLD	STP-2 90 KLD		
<b>Sample code</b>				-	5997	5998	5999	
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.61	7.58	7.69	6.5 to 9.0	
2.	Total Suspended Solids	APHA 23rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	5.0	12.0	7.0	<100	
3.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	6.0	8.0	7.0	30	
4.	Chemical Oxygen Demand as COD	APHA 23rd Edition 2017 5220 C (Pg. No.5-18 to 5-19)	mg/L	34.0	40.0	42.0	50	
5.	Oil & Grease	APHA 23rd Edition 2017 5520 B (Pg. No.5-41 to 5-42)	mg/L	Nil	Nil	Nil	10	

**Note:** BDL-Below detectable Limit. **INFERENCE:** The Measured values are within the Limit.

**STP 45 KLD** – Near Fortivia

**STP-1 90 KLD** –Near ISP Area

**STP-2 90 KLD** –Near Gunda Guest House

*Rukmini G*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

**Note:**

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TC-5323

ANNEXURE-29  
GEMS-LD/TF/23/01

### Analysis Report of Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: <b>Waste Water</b>
9	Date of Sampling	: 05.03.2022
10	Sample Received	: 05.03.2022
11	Date of Analysis	: 05.03.2022
12	Date of Analysis Completion	: 12.03.2022
13	Report Issue Date	: <b>04.04.2022</b>
14	Report Number	: <b>ULR-TC532321000001856F</b>

### Results

Sl. No.	Parameters	Protocol	Unit	Results		As per KSPCB Std
				Neutralization Pit 70 MW Power Plant	Neutralization Pit 2x70 MW Power Plant	
Sample Code				6000	6001	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.89	7.12	6.5 to 9.0
2.	Total Suspended Solids	APHA 23 <sup>rd</sup> Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	9.0	5.0	100
3.	Chemical Oxygen Demand as COD	APHA 23 <sup>rd</sup> Edition 2017 5220 C (Pg. No.5-18 to 5-19)	mg/L	18.0	36.0	250
4.	Oil & Grease	APHA 23 <sup>rd</sup> Edition 2017 5520 B (Pg. No.5-41 to 5-42)	mg/L	4.8	2.9	10

Note: BDL-Below detectable Limit.

INFERENCE: The Measured values are within the Limit.

*Rukmini G.*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

**Note:**

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Website : www.globalmining.in



TC-5323

ANNEXURE-30  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	<b>Surface Water</b>
9	Date of Sampling	:	05.03.2022
10	Sample Received	:	05.03.2022
11	Date of Analysis	:	05.03.2022
12	Date of Analysis Completion	:	12.03.2022
13	Report Issue Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001857F</b>

#### Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Danayakanakere Upstream	Danayakanakere Downstream	
Sample code				6002	6003	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.86	7.70	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (5 days at 20°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	2.0	1.0	3.0
3.	Fluorides as F	APHA 23 <sup>rd</sup> Edition 4500F <sup>-</sup> D (Pg. No.4-90 to 4-91)	mg/L	0.57	0.55	1.5
4.	Arsenic as As	APHA-23 <sup>rd</sup> Edition-3114 -B (Pg. No.3 -36 to 3-40)	mg/L	BDL	BDL	0.2

Note: BDL-Below detectable Limit

INFERENCE: The Measured values are within the Limit.

*Rukmini G*  
Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist

#### Note:

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ANNEXURE-30  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: <b>Surface Water</b>
9	Date of Sampling	: 05.03.2022
10	Sample Received	: 05.03.2022
11	Date of Analysis	: 05.03.2022
12	Date of Analysis Completion	: 12.03.2022
13	Report Issue Date	: <b>04.04.2022</b>

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Danayakanakere Upstream	Danayakanakere Downstream	
<b>Sample code</b>				<b>6002</b>	<b>6003</b>	
1.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	<b>6.2</b>	<b>6.8</b>	>5.0
2.	Color	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	<b>8</b>	<b>12</b>	300
3.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN (Pg. No.4-45 to 4-46)	mg/L	<b>BDL</b>	<b>BDL</b>	0.05
4.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	<b>BDL</b>	<b>BDL</b>	0.005
5.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.0
6.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	<b>BDL</b>	<b>BDL</b>	1.0
7.	<b>Total Coliform Organisms</b>					
	Total Coli forms	APHA 23 <sup>RD</sup> Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	500
	Escherichia coli or E. coli	APHA 23 <sup>RD</sup> Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	-

Note: BDL-Below detectable Limit

INFERENCE: The Measured values are within the Limit.

Analysed By  
Rukmini G  
Chemist

Verified By  
G. N. Mukunda Reddy  
Chemist

- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
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TC-5323

**ANNEXURE-31**  
**GEMS-LD/TF/23/01**

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	:	BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	:	WO/ADMIN/FY22/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services
4	Particulars of sample collected	:	Composite Sampling
5	Sampling Procedure	:	GEMS-LD/SOP/32
6	Discipline	:	Chemical
7	Group	:	Pollution & Environment
8	Sample Type	:	<b>Surface Water</b>
9	Date of Sampling	:	05.03.2022
10	Sample Received	:	05.03.2022
11	Date of Analysis	:	05.03.2022
12	Date of Analysis Completion	:	12.03.2022
13	Report Issue Date	:	<b>04.04.2022</b>
14	Report Number	:	<b>ULR-TC532321000001858F</b>

### Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Tungabhadra dam Upstream	Tungabhadra dam Downstream	
Sample Code				6004	6005	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.38	7.62	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	0.0	0.0	3.0
3.	Fluorides as F	APHA 23 <sup>rd</sup> Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	0.59	0.64	1.5
4.	Arsenic as As	APHA-23 <sup>rd</sup> Edition-3114 -B (Pg. No.3 -36 to 3-40)	mg/L	BDL	BDL	0.2

**Note:** BDL-Below detectable Limit

**INFERENCE:** The measured values are within the Limit.

*Rukmini G*  
**Analysed By**  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
**Verified By**  
G. N. Mukunda Reddy  
Chemist

**Note:**

1. The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
2. Water Samples will be destroyed after 15Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
3. This report is not to be reproduced wholly or in part & cannot be used as evidence in the Court of law & should not use any advertising media without special permission in writing.
4. Total liability of our laboratory is limited to the Invoice amount. Any dispute arising out of this report is subject to Hosapete jurisdiction only.
5. Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
6. Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey



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ANNEXURE-31  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: <b>Surface Water</b>
9	Date of Sampling	: 05.03.2022
10	Sample Received	: 05.03.2022
11	Date of Analysis	: 05.03.2022
12	Date of Analysis Completion	: 12.03.2022
13	Report Issue Date	: <b>04.04.2022</b>

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS - B
				Tungabhadra dam Upstream	Tungabhadra dam Downstream	
<b>Sample Code</b>				<b>6004</b>	<b>6005</b>	
1.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	<b>5.6</b>	<b>6.4</b>	>5.0
2.	Color	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	<b>6</b>	<b>8</b>	300
3.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN (Pg. No.4-45 to 4-46)	mg/L	<b>BDL</b>	<b>BDL</b>	0.05
4.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	<b>BDL</b>	<b>BDL</b>	0.005
5.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.0
6.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	<b>BDL</b>	<b>BDL</b>	1.0
7.	<b>Total Coliform Organisms,</b>					
	Total Coli forms	APHA 23 <sup>RD</sup> Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	500
	Escherichia coli or E. coli	APHA 23 <sup>RD</sup> Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	-

Note: BDL-Below detectable Limit

INFERENCE: The measured values are within the Limit.

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Analysed By  
Rukmini G  
Chemist

*G. N. Mukunda Reddy*  
Verified By  
G. N. Mukunda Reddy  
Chemist



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ANNEXURE-32  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/RO38
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: <b>Surface Water</b>
9	Date of Sampling	: 05.03.2022
10	Sample Received	: 05.03.2022
11	Date of Analysis	: 05.03.2022
12	Date of Analysis Completion	: 12.03.2022
13	Report Issue Date	: <b>04.04.2022</b>
14	Report Number	: <b>ULR-TC532321000001859F</b>

### Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS - B
				KempuHalla Upstream	KempuHalla Downstream	
<b>Sample code</b>				<b>6006</b>	<b>6007</b>	
1.	pH	APHA 23 <sup>rd</sup> Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.82	8.02	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	1.5	2.0	3.0
3.	Fluorides as F	APHA 23 <sup>RD</sup> Edition 4500F <sup>-</sup> D (Pg. No.4-90 to 4-91)	mg/L	0.80	0.84	1.5
4.	Arsenic as As	APHA-23 <sup>RD</sup> Edition-3114 -B (Pg. No.3 -36 to 3-40)	mg/L	BDL	BDL	0.2

**Note:** BDL-Below detectable Limit

**INFERENCE:** The measured values are within the Limit.

*Rukmini G*  
Analysed By  
Rukmini G  
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ANNEXURE-32  
GEMS-LD/TF/23/01

### Analysis Report of Surface Water Quality Data

1	Name of the Industry	: BMM Ispat Ltd., Danapur, Hosapete Taluk, Vijayanagara District.
2	Customer Reference	: WO/ADMIN/FY22/R038
3	Sample collected by	: GLOBAL Environment & Mining Services
4	Particulars of sample collected	: Composite Sampling
5	Sampling Procedure	: GEMS-LD/SOP/32
6	Discipline	: Chemical
7	Group	: Pollution & Environment
8	Sample Type	: <b>Surface Water</b>
9	Date of Sampling	: 05.03.2022
10	Sample Received	: 05.03.2022
11	Date of Analysis	: 05.03.2022
12	Date of Analysis Completion	: 12.03.2022
13	Report Issue Date	: <b>04.04.2022</b>

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS - B
				KempuHalla Upstream	KempuHalla Downstream	
<b>Sample code</b>				<b>6006</b>	<b>6007</b>	
1.	Dissolved Oxygen	APHA 23 <sup>RD</sup> Edition 4500 C (Pg. No.4-146)	mg/L	<b>5.8</b>	<b>6.6</b>	>5.0
2.	Color	APHA 23 <sup>RD</sup> Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	<b>12</b>	<b>18</b>	300
3.	Cyanides (as CN)	APHA 23 <sup>RD</sup> Edition 4500 CN (Pg. No.4-45 to 4-46)	mg/L	<b>BDL</b>	<b>BDL</b>	0.05
4.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	<b>BDL</b>	<b>BDL</b>	0.005
5.	Chromium (as Cr <sup>6+</sup> )	APHA-23 <sup>RD</sup> Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.0
6.	Anionic detergents (as MBAS)	APHA 23 <sup>RD</sup> Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	<b>BDL</b>	<b>BDL</b>	1.0
7.	<b>Total Coliform Organisms,</b>					
	Total Coli forms	APHA 23 <sup>RD</sup> Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	500
	Escherichia coli or E. coli	APHA 23 <sup>RD</sup> Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/100 ml	<b>Absent</b>	<b>Absent</b>	-

Note: BDL-Below detectable Limit

INFERENCE: The measured values are within the Limit.

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