

ENVIRONMENTAL MONITORING REPORT



at

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

Stage - I

JUNE - 2022

Prepared by



GLOBAL ENVIRONMENT & MINING SERVICES

NABL & MOEF RECOGNIZED LABORATORY

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STAGE-I

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: 04.07.2022**


**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 to 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 tonnes/month
5	Rolling Mill (TMT rods)	9000 tonnes/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 **JUNE-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 μm) PM2.5.

2.2.1 PARTICULATE MATTER (PM10) (size less than 10 μm).

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 (PM2.5) (size less than 2.5 μm).

Purpose

The purpose of this protocol is to provide guidelines for monitoring and analysis of Particulate Matter PM2.5 in ambient air.

Reference Method: USEPA 2001 Method of Measurement of Air Pollution: Particulate Matter (PM2.5) 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 PM2.5 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 PM2.5 size ranges divided by the actual volume of air sampled, and is expressed in $\mu\text{g}/\text{m}^3$. 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 (SO₂)

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 (NO₂):

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_2) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO_2^-) produced during sampling is determined calorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine di-hydrochloride (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_3)

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 (T0-13). 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 (1.2m³/min) sampling method capable of detecting sub.ng/m³ concentration of PAH in 24 hours sample (i.e., collected in 3 shifts of 8 hour each with 480 m³ 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 μ 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/ μ 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/ μ 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 (CS₂). The substances desorbed in the CS₂ 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 11m or below and with a stationary phase film thickness less than 1.5 11m as follows or equivalent may be recommended.

Sampling

Selection of Sorbent Tube '- Samples are collected in glass sampling tube filled with 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 f 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 36samples 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% H₂O₂ 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 isokinetic 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, SO2, NO2 values Average 67.84, 22.38, 10.52 & 12.91 $\mu\text{g}/\text{m}^3$ 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, SO2, NO2 values Average 60.74, 19.10, 9.58 & 12.13 $\mu\text{g}/\text{m}^3$ 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, SO2, NO2 values Average 58.88, 18.12, 9.63 & 12.36 $\mu\text{g}/\text{m}^3$ 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, SO2, NO2 values Average 54.76, 16.75, 8.04 & 11.88 $\mu\text{g}/\text{m}^3$ 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, SO2, NO2 values Average 53.40, 15.05, 8.38 & 12.43 $\mu\text{g}/\text{m}^3$ 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 50.23, 13.76, 8.25 & 10.16 $\mu\text{g}/\text{m}^3$ 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 470.37 $\mu\text{g}/\text{m}^3$, maximum value 1797.44 $\mu\text{g}/\text{m}^3$, and average value 869.08 $\mu\text{g}/\text{m}^3$. The Fugitive air quality 1st & 2nd 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 (mg/Nm^3) 1st and 2nd Fort Night Minimum Value 13.40 mg/Nm^3 , Maximum Value 50.50 mg/Nm^3 & Average Value 24.0 mg/Nm^3 . The Stack Emission Results given in **Annexure-9 & Annexure-19**.

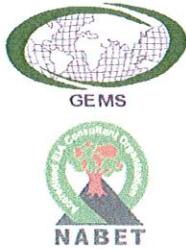
3.0 AMBIENT NOISE LEVEL MEASUREMENT

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 42.0 to 76.4 dB (A) and 39.8 to 71.3 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-33**.

3.2 CONCLUSION

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



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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	:	JUNE-2022
Location	:	A1-Danapur Village
Duration of Monitoring	:	24 Hour
Report Issued Date	:	04.07.2022
Report Number	:	ULR-TC532322000000265F

RESULTS

Parameters			PM ₁₀ [µg/m ³]		PM _{2.5} [µg/m ³]		SO ₂ [µg/m ³]		NO ₂ [µg/m ³]	
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
06.06.2022	07.06.2022	919	66.64	100	23.51	60	11.13	80	13.64	80
07.06.2022	08.06.2022	944	76.70		29.49		9.24		11.14	
13.06.2022	14.06.2022	1033	61.37		18.75		13.02		16.48	
14.06.2022	15.06.2022	1050	70.26		25.00		8.12		10.68	
20.06.2022	21.06.2022	1152	53.81		16.06		10.35		12.27	
21.06.2022	22.06.2022	1168	67.38		19.32		8.79		10.91	
27.06.2022	28.06.2022	1315	71.05		22.45		12.02		14.43	
28.06.2022	29.06.2022	1346	75.52		24.48		11.46		13.75	
Average			67.84		22.38		10.52		12.91	

INSTRUMENT DETAILS			
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / AAS-217 BL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 14-A-142	PM2.5/PM10 Sampler / 158-K-20
4	Calibration Date	01.04.2022	07.03.2022
5	Calibration Due Date	31.03.2023	06.03.2023

INFERENCE	As per NAAQMS Standards (2009), Report Status: - Measured Values for the above parameters are within the limit.
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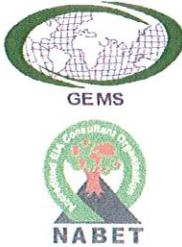
Rukmini G.
Analysed By
Rukmini G
Chemist

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 150days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
- 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.
- Total liability of our laboratory is limited to the Invoice amount. Any dispute arising out of this report is subject to Hosapete jurisdiction only.
- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
- Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey



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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/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	:	JUNE-2022
Location	:	A2-Mariyammanahalli Village
Duration of Monitoring	:	24 Hour
Report Issued Date	:	04.07.2022
Report Number	:	ULR-TC532322000000266F

RESULTS

Parameters			PM ₁₀ [µg/m ³]		PM _{2.5} [µg/m ³]		SO ₂ [µg/m ³]		NO ₂ [µg/m ³]	
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
06.06.2022	07.06.2022	920	69.43	100	19.34	60	8.01	80	10.80	80
07.06.2022	08.06.2022	945	50.74		16.13		7.12		9.32	
13.06.2022	14.06.2022	1034	57.87		17.68		9.46		11.82	
14.06.2022	15.06.2022	1051	66.92		19.08		13.02		15.34	
20.06.2022	21.06.2022	1153	48.42		15.42		10.35		12.61	
21.06.2022	22.06.2022	1169	58.40		17.02		8.46		10.46	
27.06.2022	28.06.2022	1315	62.94		26.56		11.02		14.43	
28.06.2022	29.06.2022	1347	71.18		21.55		9.24		12.27	
Average			60.74		19.10		9.58		12.13	

INSTRUMENT DETAILS			
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / APM -460BL	Enviro instruments / EI-133
3	Serial No	R.D.S./330-DTF-2005	PM2.5 /PM10 Sampler / 159-K-20
4	Calibration Date	01.04.2022	07.03.2022
5	Calibration Due Date	31.03.2023	06.03.2023

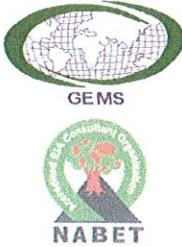
INFERENCE	As per NAAQMS Standards (2009), Report Status: - Measured Values for the above parameters are within the limit.
------------------	--

Puy G.
Analysed By
Rukmini G
Chemist

Mallikarjun
Verified By
Mallikarjun
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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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	:	JUNE-2022
Location	:	A3-Hanumanahalli Village
Duration of Monitoring	:	24 Hour
Report Issued Date	:	04.07.2022
Report Number	:	ULR-TC532322000000267F

RESULTS

Parameters			PM ₁₀ [µg/m ³]		PM _{2.5} [µg/m ³]		SO ₂ [µg/m ³]		NO ₂ [µg/m ³]	
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
06.06.2022	07.06.2022	921	58.66	100	17.50	60	10.91	80	13.52	80
07.06.2022	08.06.2022	946	64.50		22.02		9.24		11.36	
13.06.2022	14.06.2022	1035	52.17		15.57		7.35		10.00	
14.06.2022	15.06.2022	1052	71.59		23.89		9.35		12.84	
20.06.2022	21.06.2022	1154	45.71		13.81		8.35		10.80	
21.06.2022	22.06.2022	1170	61.72		19.84		11.35		14.43	
27.06.2022	28.06.2022	1316	53.35		16.08		8.01		10.57	
28.06.2022	29.06.2022	1348	63.31		16.25		12.46		15.34	
Average			58.88		18.12		9.63		12.36	

SL NO	INSTRUMENT DETAILS			
1	Instrument Name		Respirable Dust Sampler (RDS)	
2	Make & Model		Greentech instruments / GTI -151	
3	Serial No		R.D.S./242-DTC-2020	
4	Calibration Date		01.04.2022	
5	Calibration Due Date		31.03.2023	

INFERENCE	As per NAAQMS Standards (2009), Report Status: - Measured Values for the above parameters are within the limit.
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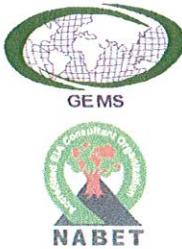
Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



Note:

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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	:	JUNE-2022
Location	:	A4-Galemmanagudi Village
Duration of Monitoring	:	24 Hour
Report Issue Date	:	04.07.2022
Report Number	:	ULR-TC532322000000284F

RESULTS

Parameters			PM₁₀ [µg/m³]		PM_{2.5} [µg/m³]		SO₂ [µg/m³]		NO₂ [µg/m³]	
Reference Method			IS:5182: 2006 (Part-23) (RF-2017)		USEPA 2001 Gravimetric Method		IS:5182: 2001 (Part-2) (RF-2017)		IS:5182: (Part-6) (RF-2017)	
Date of Sampling	Date of Sample Received	Sample Code	Result	STD	Result	STD	Result	STD	Result	STD
08.06.2022	09.06.2022	962	59.85	100	18.93	60	7.68	80	13.41	80
09.06.2022	10.06.2022	984	60.21		20.60		6.90		10.91	
15.06.2022	16.06.2022	1079	67.17		24.12		10.46		12.61	
16.06.2022	17.06.2022	1095	48.10		12.43		8.12		10.57	
22.06.2022	23.06.2022	1187	52.98		13.40		6.90		9.43	
23.06.2022	24.06.2022	1219	41.61		11.63		7.46		12.61	
29.06.2022	30.06.2022	1349	50.04		13.05		8.01		14.21	
30.06.2022	01.07.2022	1357	58.14		19.84		8.79		11.31	
Average			54.76		16.75		8.04		11.88	

INSTRUMENT DETAILS			
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / AAS-217 BL	Enviro instruments / EI-133
3	Serial No	R.D.S. / 14-A-142	PM2.5 /PM10 Sampler / 158-K-20
4	Calibration Date	01.04.2022	07.03.2022
5	Calibration Due Date	31.03.2023	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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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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	:	JUNE-2022
Location	:	A5-Gunda Village
Duration of Monitoring	:	24 Hour
Report Issue Date	:	04.07.2022
Report Number	:	ULR-TC532322000000285F

RESULTS

Parameters			PM10 [µg/m³]		PM2.5 [µg/m³]		SO2 [µg/m³]		NO2 [µg/m³]	
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
08.06.2022	09.06.2022	963	60.23	100	18.12	60	7.46	80	11.71	80
09.06.2022	10.06.2022	985	58.04		17.29		8.79		14.32	
15.06.2022	16.06.2022	1080	50.95		14.47		7.57		10.46	
16.06.2022	17.06.2022	1096	48.65		13.06		7.23		11.71	
22.06.2022	23.06.2022	1188	54.34		14.54		10.02		14.32	
23.06.2022	24.06.2022	1220	42.46		12.91		7.01		12.39	
29.06.2022	30.06.2022	1350	63.16		15.59		7.91		11.14	
30.06.2022	01.07.2022	1358	49.41		14.47		11.02		13.41	
Average			53.40		15.05		8.38		12.43	

INSTRUMENT DETAILS			
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Enviro instruments / APM -460 BL	Enviro instruments / EI-133
3	Serial No	R.D.S./330-DTF-2005	PM2.5 /PM10 Sampler / 159-K-20
4	Calibration Date	01.04.2022	07.03.2022
5	Calibration Due Date	31.03.2023	06.03.2023

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

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Analysed By
Rukmini G
Chemist

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



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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/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	:	JUNE-2022
Location	:	A6-Gunda Tanda Village
Duration of Monitoring	:	24 Hour
Report Issue Date	:	04.07.2022
Report Number	:	ULR-TC532322000000286F

RESULTS

Parameters			PM ₁₀ [µg/m ³]		PM _{2.5} [µg/m ³]		SO ₂ [µg/m ³]		NO ₂ [µg/m ³]	
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
08.06.2022	09.06.2022	964	52.83	100	16.26	60	6.79	80	7.80	80
09.06.2022	10.06.2022	986	60.33		17.07		9.57		9.37	
15.06.2022	16.06.2022	1081	53.01		15.03		9.79		10.41	
16.06.2022	17.06.2022	1097	36.46		10.46		6.34		8.43	
22.06.2022	23.06.2022	1189	47.77		14.97		8.12		11.13	
23.06.2022	24.06.2022	1221	39.87		12.66		6.23		9.78	
29.06.2022	30.06.2022	1351	61.10		10.77		10.24		12.18	
30.06.2022	01.07.2022	1359	50.44		12.87		8.90		12.21	
Average			50.23		13.76		8.25		10.16	

INSTRUMENT DETAILS			
1	Instrument Name	Respirable Dust Sampler (RDS)	Fine Particulate Sampler (FPS)
2	Make & Model	Greentech instruments / GTI -151	Enviro instruments / EI-133
3	Serial No	R.DS./242-DTC-2020	PM2.5 /PM10 Sampler / 160-K-20
4	Calibration Date	01.04.2022	07.03.2022
5	Calibration Due Date	31.03.2023	06.03.2023

INFERENCE	As per NAAQMS Standards (2009), Report Status: - Measured Values for the above parameters are within the limit.
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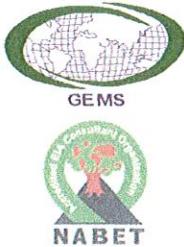
Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
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/R038
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	:	JUNE-2022(1 st Fort Night)
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Method adopted	:	IS 5182 (Part 4): 1999 RA 2014
9	Report Issued Date	:	04.07.2022
10	Report Number	:	ULR-TC532322000000280F

RESULTS

Sl. No.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ($\mu\text{g}/\text{m}^3$)	Standard
I. Beneficiation Plant-1						
1.	Main Canteen	939	07.06.2022	08.06.2022	1102.92	2000
2.	Main Crusher	940	07.06.2022	08.06.2022	983.94	2000
3.	Iron Ore Screen	941	07.06.2022	08.06.2022	1102.01	2000
II. Pellet Plant-1						
4.	Near Pellet Plant	942	07.06.2022	08.06.2022	1059.68	2000
5.	TG Zero Meter	943	07.06.2022	08.06.2022	837.37	2000
6.	Pellet Stock Yard	957	08.06.2022	09.06.2022	1797.44	2000
III. Sponge Iron Division-1						
7.	Control Room SID-I	958	08.06.2022	09.06.2022	1323.24	2000
8.	Near Product bin	959	08.06.2022	09.06.2022	1030.89	2000
9.	Coal Feeding Area	960	08.06.2022	09.06.2022	826.04	2000
IV. Induction Furnace & Rolling Mill						
10.	IF Office	961	08.06.2022	09.06.2022	565.26	2000
11.	TMT Stock Yard	980	09.06.2022	10.06.2022	902.41	2000
12.	RML Office	981	09.06.2022	10.06.2022	959.81	2000
V. Power Plant 25 MW						
13.	25 MW ESP	982	09.06.2022	10.06.2022	838.52	2000
14.	25 MW ACC	983	09.06.2022	10.06.2022	485.04	2000
VI. Site Services						
15.	Main Stores	1000	10.06.2022	11.06.2022	640.18	2000
16.	Old Admin Building	1001	10.06.2023	11.06.2023	486.92	2000
17.	Labour Gate	1002	10.06.2024	11.06.2024	501.73	2000
18.	Safety Office	1003	10.06.2025	11.06.2025	470.37	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				
2	Make & Model	Greentech Instruments/GTI-151				
3	Serial No	RDS / 241-DTC-2020	RDS / 243-DTL-2020	RDS / 244-DTL-2020	RDS / 193-DTH-2019	RDS / 197-DTH-2019
4	Calibration Date	01.04.2022	01.04.2022	01.04.2022	01.04.2022	01.04.2022
5	Calibration Due Date	31.03.2023	31.03.2023	31.03.2023	31.03.2023	31.03.2023

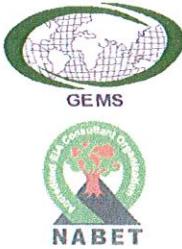
Puyli
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



Note:

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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	:	JUNE-2022(2 nd Fort Night)
6	Discipline	:	Chemical
7	Group	:	Atmospheric Pollution
8	Method adopted	:	IS 5182 (Part 4): 1999 RA 2014
9	Report Issued Date	:	04.07.2022
10	Report Number	:	ULR-TC53232200000338F

RESULTS

Sl. No.	Location / Plant	Sample Code	Date Of Monitoring	Date Of Sample Receipt	SPM ($\mu\text{g}/\text{m}^3$)	Standard
I. Beneficiation Plant-1						
1.	Main Canteen	1163	21.06.2022	22.06.2022	800.71	2000
2.	Main Crusher	1164	21.06.2022	22.06.2022	1397.33	2000
3.	Iron Ore Screen	1165	21.06.2022	22.06.2022	833.62	2000
II. Pellet Plant-1						
4.	Near Pellet Plant	1166	21.06.2022	22.06.2022	954.67	2000
5.	TG Zero Meter	1167	21.06.2022	22.06.2022	584.43	2000
6.	Pellet Stock Yard	1182	22.06.2022	23.06.2022	1666.69	2000
III. Sponge Iron Division-1						
7.	Control Room SID-I	1183	22.06.2022	23.06.2022	879.44	2000
8.	Near Product bin	1184	22.06.2022	23.06.2022	708.20	2000
9.	Coal Feeding Area	1185	22.06.2022	23.06.2022	855.23	2000
IV. Induction Furnace & Rolling Mill						
10.	IF Office	1186	22.06.2022	23.06.2022	659.37	2000
11.	TMT Stock Yard	1215	23.06.2022	24.06.2022	758.59	2000
12.	RML Office	1216	23.06.2022	24.06.2022	1170.50	2000
V. Power Plant 25 MW						
13.	25 MW ESP	1217	23.06.2022	24.06.2022	1147.76	2000
14.	25 MW ACC	1218	23.06.2022	24.06.2022	645.34	2000
VI. Site Services						
15.	Main Stores	1255	24.06.2022	25.06.2022	554.31	2000
16.	Old Admin Building	1256	24.06.2022	25.06.2022	626.85	2000
17.	Labour Gate	1257	24.06.2022	25.06.2022	523.75	2000
18.	Safety Office (OHC)	1258	24.06.2022	25.06.2022	606.24	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				
2	Make & Model	Greentech Instruments/GTI-151				
3	Serial No	RDS / 241-DTC-2020	RDS / 243-DTL-2020	RDS / 244-DTL-2020	RDS / 193-DTH-2019	RDS / 197-DTH-2019
4	Calibration Date	01.04.2022	01.04.2022	01.04.2022	01.04.2022	01.04.2022
5	Calibration Due Date	31.03.2023	31.03.2023	31.03.2023	31.03.2023	31.03.2023

Rukmini G
Analysed By

Rukmini G
Chemist

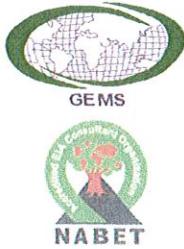
Mallikarjun S
Verified By

Mallikarjun S
Chemist



Note:

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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/R038
3	Sample collected by	:	GLOBAL Environment & Mining Services, Hosapete
4	Particulars of sample collected	:	Vayubodhan Stack sampler/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	Pellet Plant-1 ESP
10	Month of Sampling	:	JUNE-2022
11	Date of Sample Received	:	03.06.2022 & 22.06.2022
12	Date of Sample Analysis	:	04.06.2022 & 23.06.2022
13	Date Sample Analysis Completion	:	06.06.2022 & 24.06.2022
14	Report Issued Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000248F

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 st Fort Night	2 nd Fort Night	
				03.06.2022	22.06.2022	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	32	29	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	119	121	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	6.96	7.06	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m ³ /hr	381034	386508	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm ³ /hr	287834	290718	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm ³	48.20	43.70	150
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm ³	91.52	77.22	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm ³	43.05	36.90	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.039	0.027	-

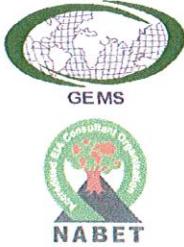
Note: NS- Not Specified, RA: Reaffirmed, INFERENCE: The Measured Values are within the limits.

Rukmini G.
Analysed By
Rukmini G
Chemist

Mallikarjun S.
Verified By
Mallikarjun S
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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	2X100 TPD Sponge iron plant ESP
10	Month of Sampling	:	JUNE-2022
11	Date of Sample Received	:	09.06.2022 & 18.06.2022
12	Date of Sample Analysis	:	10.06.2022 & 19.06.2022
13	Date Sample Analysis Completion	:	11.06.2022 & 20.06.2022
14	Report Issued Date	:	04.07.2022
15	Report Number	:	ULR-TC53232200000292F

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 st Fort Night	2 nd Fort Night	
				09.06.2022	18.06.2022	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	32	31	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	179	161	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	8.28	8.14	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m ³ /hr	93657	92073	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm ³ /hr	61365	62896	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm ³	33.80	50.50	150
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm ³	94.38	88.66	100
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm ³	24.60	28.70	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.054	0.039	-

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

Rukmini G.
Analysed By
Rukmini G
Chemist

Mallikarjun S.
Verified By
Mallikarjun S
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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	Induction Furnace1& 2
10	Month of Sampling	:	JUNE-2022
11	Date of Sample Received	:	-
12	Date of Sample Analysis	:	-
13	Date Sample Analysis Completion	:	-
14	Report Issued Date	:	04.07.2022
15	Report Number	:	-

Stack Details

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

Emission Details

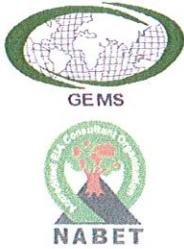
Sl. No.	Parameters	Method	Unit	Result		Permissible Limit
				1 st Fort Night	2 nd Fort Night	
				-	-	
Under Maintenance	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	-	-	-
	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C			
	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)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

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



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TC-5323

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 / VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	Rolling mill reheating furnace
10	Month of Sampling	:	JUNE-2022
11	Date of Sample Received	:	08.06.2022 & 20.06.2022
12	Date of Sample Analysis	:	09.06.2022 & 21.06.2022
13	Date Sample Analysis Completion	:	10.06.2022 & 22.06.2022
14	Report Issued Date	:	04.07.2022
15	Report Number	:	ULR-TC53232200000287F

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 st Fort Night	2 nd Fort Night	
				08.06.2022	20.06.2022	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	35	31	-
2	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	370	371	-
3	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec	9.35	9.04	-
4	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m ³ /hr	16922	16361	-
5	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm ³ /hr	7776	7535	-
6	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm ³	20.90	26.70	100
7	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm ³	243.10	217.36	270
8	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm ³	41.0	30.75	50
9	Carbon Monoxide	GEMS/SOP/69	%	0.069	0.062	-

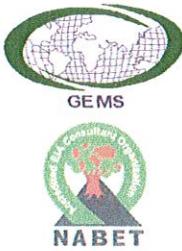
Note: NS- Not Specified. RA: Reaffirmed, INFERENCE: The Measured Values are within the limits.

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
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 / VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	AFBC Boiler ESP (25 MW Power Plant)
10	Month of Sampling	:	JUNE-2022
11	Date of Sample Received	:	21.06.2022
12	Date of Sample Analysis	:	22.06.2022
13	Date Sample Analysis Completion	:	23.06.2022
14	Report Issued Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000339F

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 st Fort Night	2 nd Fort Night	
				-	21.06.2022	
1	Ambient Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C	Shutdown	33	-
	Stack Temperature	IS: 11255 (Part 1) - 1985 (RA 2014)	°C		113	-
	Velocity of Fuel Gas	IS: 11255 (Part 1) - 1985 (RA 2014)	m/sec		6.48	-
	Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)	m ³ /hr		114349	-
	Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)	Nm ³ /hr		87595	-
	Particulate Matter	IS: 11255 (Part 1) - 1985 (RA 2014)	mg/Nm ³		21.60	50
	Sulphur Dioxide	IS: 11255 (Part 2): (RA 2014)	mg/Nm ³		82.94	600
	Nitrogen Dioxide	IS:11255 (Part7): 2005 (RA 2017)	mg/Nm ³		248.05	300
	Carbon Monoxide	GEMS/SOP/69	%		0.196	-

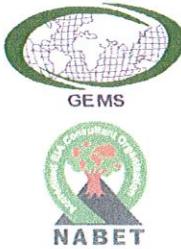
Note: NS- Not Specified. RA: Reaffirmed,

Rukmini G
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Rukmini G
Chemist

Mallikarjun S
Verified By
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Chemist

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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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (1st Fort Night)
10	Date of Sample Received	:	13.06.2022
11	Date of Sample Analysis	:	14.06.2022
12	Date Sample Analysis Completion	:	15.06.2022
13	Report Issued Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000310F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
Beneficiation Plant											
1	Ore Crushing & Screening	-	-	-	-	-	-	30	0.40	-	50
2	Ore Fines Hopper Bottom	-	-	-	-	-	-	30	0.40	-	50
3	Main Crusher (RMHS)	13.06.2022	1036	---	34	38	5.94	25	0.50	16.7	50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
1	Ore Crushing & Screening	-	-	-
2	Ore Fines Hopper Bottom	-	-	-
3	Main Crusher (RMHS)	4199	4003	-

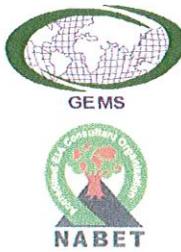
Parameter	Protocol
Particulate Matter (mg/Nm ³)	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist

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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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (1st Fort Night)
10	Date of Sample Received	:	03.06.2022 & 04.06.2022
11	Date of Sample Analysis	:	04.06.2022 & 06.06.2022
12	Date Sample Analysis Completion	:	06.06.2022 & 07.06.2022
13	Report Issued Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000249F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
Pellet Plant											
4	Mixed Area	04.06.2022	904	---	35	37	5.41	3.0	0.30	24.60	50
5	Pellet Discharge Point	03.06.2022	879	---	34	44	6.51	7.0	0.50	19.20	50
6	Product Transfer Point	04.06.2022	905	---	36	41	5.58	6.5	0.60	16.20	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
4	Mixed Area	1377	1310	-
5	Pellet Discharge Point	4602	4287	-
6	Product Transfer Point	5680	5332	-

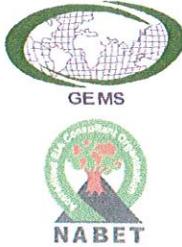
Parameter	Protocol
Particulate Matter (mg/Nm ³)	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist

Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 15Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
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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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (1st Fort Night)
10	Date of Sample Received	:	10.06.2022 & 11.06.2022
11	Date of Sample Analysis	:	11.06.2022 & 12.06.2022
12	Date Sample Analysis Completion	:	12.06.2022 & 13.06.2022
13	Report Issued Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000301F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
2 X 100 TPD Sponge Iron Kiln 1 & 2											
7	Cooler Discharge -1	10.06.2022	1006	---	34	38	5.40	30	1.20	18.20	50
8	Cooler Discharge -2	11.06.2022	1022	---	30	42	5.18	30	1.20	26.30	50
9	Coal Crusher	-		---	-	-	-	30	1.20	-	50
10	Production Separation Bin (PSB)	11.06.2022	1023	---	31	39	5.73	30	1.20	21.00	50
11	Intermediate Bin	11.06.2022	1024	---	33	41	5.65	30	1.20	30.80	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
7	Cooler Discharge -1	21989	20887	-
8	Cooler Discharge -2	21093	19711	-
9	Coal Crusher	-	-	-
10	Production Separation Bin (PSB)	23333	22163	-
11	Intermediate Bin	23007	21677	-

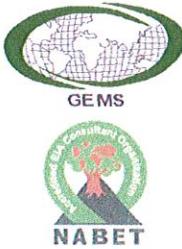
Parameter	Protocol
Particulate Matter (mg/Nm ³)	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist

Note:

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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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (2ND Fort Night)
10	Date of Sample Received	:	-
11	Date of Sample Analysis	:	-
12	Date Sample Analysis Completion	:	-
13	Report Issued Date	:	04.07.2022
14	Report Number	:	-

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
Beneficiation Plant											
1	Ore Crushing & Screening	-		---							50
2	Ore Fines Hopper Bottom	-		---							50
3	Main Crusher (RMHS)	-		---							50

Sl. No	Beneficiation Plant	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
1	Ore Crushing & Screening	-	-	-
2	Ore Fines Hopper Bottom	-	-	-
3	Main Crusher (RMHS)	-	-	-

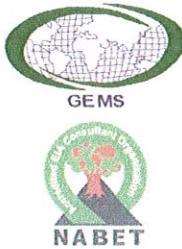
Parameter	Protocol
Particulate Matter (mg/Nm ³)	IS: 11255 (Part 1) - 1985 (reaffirmed 2014)
Gas flow rate at Stack Condition	IS-11255(Part 03) (RA 2014)
Gas flow rate at NTP	IS-11255(Part 03) (RA 2014)

Mallikarjun S
Verified By
Mallikarjun S
Chemist



Note:

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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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (2ND Fort Night)
10	Date of Sample Received	:	24.06.2022
11	Date of Sample Analysis	:	25.06.2022
12	Date Sample Analysis Completion	:	27.06.2022
13	Report Issued Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000364F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
Pellet Plant											
4	Mixed Area	24.06.2022	1259	---	29	39	5.36	3.0	0.30	27.6	50
5	Pellet Discharge Point	24.06.2022	1260	---	33	49	6.61	7.0	0.50	25.4	50
6	Production Transfer Point (AGB)	24.06.2022	1261	---	31	41	5.68	6.5	0.60	13.4	50

Sl. No	Pellet Plant	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
4	Mixed Area	1364	1295	-
5	Pellet Discharge Point	4673	4287	-
6	Production Transfer Point (AGB)	5782	5449	-

Parameter	Protocol
Particulate Matter (mg/Nm ³)	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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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Website : www.globalmining.in



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/ VSS-1 Sl. No: Stack Monitoring Kit/ 304-DTB-2007
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	:	JUNE-2022 (2ND Fort Night)
10	Date of Sample Received	:	22.06.2022 & 25.06.2022
11	Date of Sample Analysis	:	23.06.2022 & 27.06.2022
12	Date Sample Analysis Completion	:	24.06.2022 & 28.06.2022
13	Report Issued Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000340F

Sl. No	Stack Attached to	Date of Monitoring	Sample Code	Fuel Used	T _a °C	T _S °C	V m/Sec	Height (m)	Diameter (m)	PM mg/Nm ³	KSPCB Std mg/Nm ³
Chimneys attached to Bag Filter (De dusting Units)											
2 X 100 TPD Sponge Iron Kiln 1 & 2											
7	Cooler Discharge -1	25.06.2022	1288	---	29	53	5.42	30	1.20	16.7	50
8	Cooler Discharge -2	22.06.2022	1191	---	30	41	5.42	30	1.20	18.3	50
9	Coal Crusher	-	-	---	-	-	-	30	1.20	-	50
10	Transfer House-PSB	22.06.2022	1192	---	30	39	5.69	30	1.20	26.1	50
11	Intermediate Bin	25.06.2022	1289	---	30	42	5.85	30	1.20	25.9	50

Sl. No	2 X 100 TPD Sponge Iron Kiln 1 & 2	Gas flow rate at Stack Condition m ³ /hr	Gas flow rate at NTP Nm ³ /hr	KSPCB Std
7	Cooler Discharge -1	22070	20034	-
8	Cooler Discharge -2	21297	20087	-
9	Coal Crusher	-	-	-
10	Transfer House-PSB	23170	21982	-
11	Intermediate Bin	23821	22373	-

Parameter	Protocol
Particulate Matter (mg/Nm ³)	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)

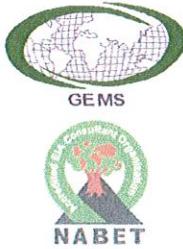
Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



Note:

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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/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: 24.05.2022 Calibration Due Date: 23.05.2023
Month	:	JUNE-2022
Report Issue Date	:	04.07.2022
Method Adopted	:	IS 9989-1981 Reaffirmed 2014
Report No	:	ULR-TC53232200000294F

Sl. No	Location	Date of Monitoring	Noise Level dB (A)				
			Day Time		Standard	Night Time	
			Min	Max		Min	Max
1	Main Gate	08.06.2022	42.8	58.2	75	41.2	56.2
2	Near ATM	08.06.2022	42.0	56.4	75	40.2	53.5
3	Transit House	08.06.2022	42.9	54.8	75	39.8	52.6
4	CAAQMS Station	09.06.2022	47.2	57.2	75	44.6	55.2
5	Gunda Road	09.06.2022	45.2	58.2	75	42.4	55.4
6	Gunda Railway Station	09.06.2022	45.6	59.2	75	43.6	57.4
7	Bagging Shed	10.06.2022	58.4	66.2	75	55.2	63.8
8	Railway Siding	10.06.2022	59.8	76.2	75	56.3	70.2
9	4th Gate	10.06.2022	42.8	62.5	75	40.8	60.1
10	Bricks Plant	11.06.2022	46.2	56.4	75	44.1	52.6
11	Kempuhalla (Wagon Tippler)	11.06.2022	48.0	58.2	75	47.1	55.3
12	Danapura Bridge	11.06.2022	48.6	60.8	75	43.2	58.7
13	2nd Gate	13.06.2022	42.8	58.8	75	41.1	56.6
14	Project Store	13.06.2022	44.2	56.4	75	42.6	54.1
15	Dispatch (Truck Parking Area)	13.06.2022	49.4	66.4	75	47.4	62.8

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


 Verified By
 Mallikarjun S
 Chemist



Note:

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Website : www.globalmining.in



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: 24.05.2022 Calibration Due Date: 23.05.2023
Month	:	JUNE-2022
Report Issue Date	:	04.07.2022
Method Adopted	:	IS 9989-1981 Reaffirmed 2014
Report No	:	ULR-TC532322000000330F

Sl. No	Location	Date of Monitoring	Noise Level dB (A)					
			Day Time		Standard	Night Time		Standard
			Min	Max		Min	Max	
1	Main Gate	16.06.2022	42.8	56.2	75	40.5	54.2	70
2	Near ATM	16.06.2022	42.0	58.2	75	40.1	55.3	70
3	Transit House	17.06.2022	43.4	59.3	75	41.6	57.7	70
4	CAAQMS Station	17.06.2022	44.8	58.2	75	42.4	56.5	70
5	Gunda Road	18.06.2022	44.8	53.4	75	43.7	51.2	70
6	Gunda Railway Station	18.06.2022	50.1	65.8	75	48.6	62.7	70
7	Bagging Shed	22.06.2022	52.8	69.2	75	50.8	67.8	70
8	Railway Siding	22.06.2022	52.8	76.4	75	49.8	71.3	70
9	4th Gate	20.06.2022	52.8	66.5	75	50.2	64.7	70
10	Bricks Plant	20.06.2022	46.2	56.5	75	44.3	55.1	70
11	Kempuhalla (Wagon Tippler)	21.06.2022	46.4	56.4	75	43.8	53.6	70
12	Danapura Bridge	21.06.2022	56.4	64.5	75	53.7	62.8	70
13	2nd Gate	24.06.2022	44.2	56.5	75	42.8	53.9	70
14	Project Store	24.06.2022	42.4	50.8	75	40.8	40.2	70
15	Dispatch (Truck Parking Area)	24.06.2022	59.0	69.4	75	57.2	57.5	70

INFERENCE

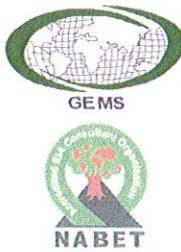
**As per CPCB Standards,
Report Status: - Measured Values for the above parameters are within the limit.**

Mallikarjun S
 Verified By
 Mallikarjun S
 Chemist



Note:

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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/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	:	1053
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000315F

Results

Sl. No	Parameters	Protocol	Unit	Danapur Village (GW1)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.21	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	2900	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	1784	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.6	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<1.0	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500 -SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	161.50	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	458.2	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	175.90	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	28.37	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	556.50	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	466.30	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.70	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	17.74	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	424.0	250	600

Note:

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2. Water Samples will be destroyed after 150days, 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-22

17.	Acidity as CaCO ₃	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	0.12	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.252	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.142	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd 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
Chemist

Mallikarjun S
Verified By
Chemist



Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 15Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
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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	:	1053
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

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 rd 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 rd Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

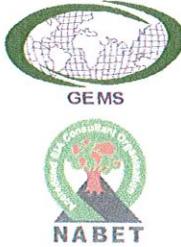
Note: Ab: Absent, NR: No Relaxation

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
- Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey



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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/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	:	1054
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000316F

Results

Sl. No	Parameters	Protocol	Unit	Hanumanahalli Village (GW2)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.44	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	3100	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	1924	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.4	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<1.0	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500 -SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	112.45	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	777.70	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	170.0	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	39.07	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	585.80	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	214.94	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.98	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	44.16	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22 nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	534.0	200	600

Note:

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TC-5323

ANNEXURE-23

17.	Acidity as CaCO ₃	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.255	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.078	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd 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.

INFEERENCE

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

Mallikarjun S
Verified By
Mallikarjun S
Chemist



Note:

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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	:	1054
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

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 rd 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 rd Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

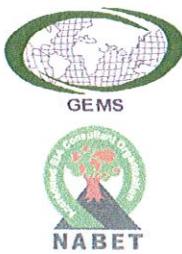
Note: Ab: Absent, NR: No Relaxation

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



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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/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	:	1055
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC53232200000317F

Results

Sl. No	Parameters	Protocol	Unit	Galemmanna Gudi Village (GW3)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.45	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	2700	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	1692	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.5	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	<1.0	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500-SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	160.49	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	313.0	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	187.0	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	22.23	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	559.0	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	391.3	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.80	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	33.9	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	546.0	200	600

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.

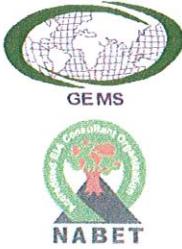
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TC-5323

ANNEXURE-24

17.	Acidity as CaCO ₃	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	0.18	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.289	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.118	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

Note: GW3: Galemmana Gudi 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

Mallikarjun S
Verified By
Mallikarjun S
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 150Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
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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	:	1055
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

Results

Sl. No	Parameters	Protocol	Unit	Galemmanna 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 rd 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 rd 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

Mallikarjun S
Verified By
Mallikarjun S
Chemist



- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
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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/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	:	1056
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000318F

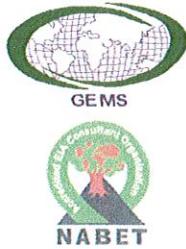
Results

Sl. No	Parameters	Protocol	Unit	Mariyammana Halli Village (GW4)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.40	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	2600	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	1664	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.8	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	Nil	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500-SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	195.76	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	466.40	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	123.0	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	43.08	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	484.80	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	332.40	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.31	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	41.43	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	450.0	200	600

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.
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6. Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey





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ANNEXURE-25

17.	Acidity as CaCO ₃	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	0.14	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.301	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.091	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd 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

Mallikarjun S
Verified By
Mallikarjun S
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	:	1056
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

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 rd 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 rd 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

Mallikarjun S.
Verified By
Mallikarjun S
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/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	:	1057
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000319F

Results

Sl. No	Parameters	Protocol	Unit	Gunda Thanda (GW5)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.15	6.5 to 8.5	NR
2.	Conductivity	APHA 23rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	630	-	-
3.	Total Dissolved Solids	APHA 23rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	406	500	2000
4.	Turbidity (NTU)	APHA 23rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.3	1	5
5.	Total Suspended Solids	APHA 23rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	Nil	-	-
6.	Sulphate as SO ₄	APHA 23rd Edition 2017 4500 -SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	130.20	200	400
7.	Phosphorus as P	APHA 23rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	85.09	-	-
9.	Potassium as K	APHA 23rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	56.57	75	200
11.	Magnesium as Mg	APHA 23rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	25.95	30	100
12.	Total Hardness as CaCO ₃	APHA 23rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	248.40	200	600
13.	Chloride as Cl	APHA 23rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	57.80	250	1000
14.	Fluoride as F	APHA 23rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.66	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	14.81	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	304.0	200	600

Note:

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TC-5323

ANNEXURE-26

17.	Acidity as CaCO ₃	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	0.14	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.256	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.075	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

Note: GW5: Gunda Thanda. 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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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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/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	:	1057
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

Results

Sl. No	Parameters	Protocol	Unit	Gunda Thanda (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 rd 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 rd 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

Mallikarjun S
Verified By
Mallikarjun S
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/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	:	1058
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000320F

Results

Sl. No	Parameters	Protocol	Unit	Gunda Village (GW6)	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23 rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.50	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	1390	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	903	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.2	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	Nil	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500 -SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	37.50	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	154.50	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	113.30	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	18.54	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	359.50	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	141.94	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.52	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	3.67	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	356.0	200	600

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.

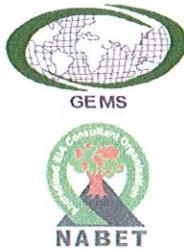
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TC-5323

ANNEXURE-27

17.	Acidity as CaCO ₃	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	0.11	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 23rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.235	0.05	1.50
23.	Zinc as Zn	APHA 23rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.088	5	15
24.	Lead as Pb	APHA 23rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23rd Edition 2017 3114 B. (Pg. No.3-36 to 3-40)	mg/L	<0.001	0.001	NR

Note: GW6: Gunda 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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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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/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	:	1058
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022

Results

Sl. No	Parameters	Protocol	Unit	Gunda Village (GW6)	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 rd 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 rd 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
Analysed By
Rukmini G
Chemist

Mallikarjun
Verified By
Mallikarjun S
Chemist



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TC-5323

**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/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	:	1059
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	18.06.2022
14	Report Issue Date	:	04.07.2022
15	Report Number	:	ULR-TC532322000000321F

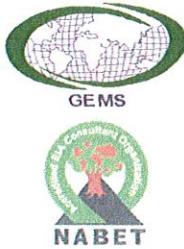
Results

Sl. No	Parameters	Protocol	Unit	RO Drinking Water	Standards as per IS: 10500:2012	
					Desirable Limits	Permissible Limits
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.65	6.5 to 8.5	NR
2.	Conductivity	APHA 23 rd Edition 2017 2510 A (Pg. No.2-56 to 2-58)	µS/cm	50	-	-
3.	Total Dissolved Solids	APHA 23 rd Edition 2017 2540 C (Pg. No.2-69 to 2-70)	mg/L	32	500	2000
4.	Turbidity (NTU)	APHA 23 rd Edition 2017 2130 B (Pg. No.2-13 to 2-15)	NTU	0.1	1	5
5.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	Nil	-	-
6.	Sulphate as SO ₄	APHA 23 rd Edition 2017 4500 -SO ₄ ²⁻ E (Page No. 4-199 to 4-200)	mg/L	7.91	200	400
7.	Phosphorus as P	APHA 23 rd Edition 2017 4500-P D (Page No. 4-163 to 4-164)	mg/L	Nil	-	-
8.	Sodium as Na	APHA 23 rd Edition 2017 Na 3500 B (Pg. No.3-99 to 3-100)	mg/L	1.92	-	-
9.	Potassium as K	APHA 23 rd Edition 2017 K 3500 B (Pg. No.3-89 to 3-90)	mg/L	0.0	-	-
10.	Calcium as Ca	APHA 23 rd Edition 2017 3500 Ca B (Pg. No.3-69 to 3-70)	mg/L	3.23	75	200
11.	Magnesium as Mg	APHA 23 rd Edition 2017 3500-B Mg By calculation (Pg. No.3-86)	mg/L	1.47	30	100
12.	Total Hardness as CaCO ₃	APHA 23 rd Edition 2017 2340 C (Page No. 2-48 to 2-50)	mg/L	14.14	200	600
13.	Chloride as Cl	APHA 23 rd Edition 2017 4500 Cl- (Page No. 4-75 to 4-76)	mg/L	5.06	250	1000
14.	Fluoride as F	APHA 23 rd Edition 2017 4500 F- D (Page No. 4-90 to 4-91)	mg/L	0.81	1	1.5
15.	Nitrate Nitrogen as NO ₃	APHA 23 rd Edition 2017 4500 NO ₃ E (Pg. No.4-131 to 4-132)	mg/L	0.83	45	NR
16.	Total Alkalinity as CaCO ₃	APHA 22nd Edition 2017 2320 B (Pg. No.2-37 to 2-39)	mg/L	26.0	200	600

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TC-5323

ANNEXURE-28

17.	Acidity as CaCO ₃	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	0.21	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 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.02	0.02	NR
21.	Manganese as Mn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.1	0.10	0.30
22.	Copper as Cu	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.277	0.05	1.50
23.	Zinc as Zn	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	0.092	5	15
24.	Lead as Pb	APHA 23 rd Edition 3111 B. Direct Air Acetylene Flame Method	mg/L	<0.01	0.01	NR
25.	Mercury as Hg	APHA 23 rd 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.

INFEERENCE

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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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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	:	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	:	1059
10	Date of Sampling	:	11.06.2022
11	Sample Received	:	11.06.2022
12	Date of Analysis	:	11.06.2022
13	Date of Analysis Completion	:	20.06.2022
14	Report Issue Date	:	04.07.2022

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 rd 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 rd Edition 9222 (p.no.9-82) Membrane filter technique	MPN/ 100 ml	Ab	Shall not be detectable in any 100ml sample	-

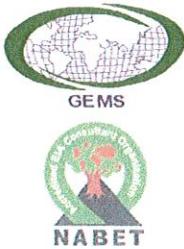
Note: Ab: Absent, NR: No Relaxation

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



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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	:	Sewage Treatment Plant (Outlet)
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	11.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000322F

Sl. No.	Parameters	Protocol	Unit	Results			As per KSPCB Std
				STP 45 KLD	STP-1 90 KLD	STP-2 90 KLD	
		Sample code	-	1060	1061	1062	
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.90	7.55	7.50	6.5 to 9.0
2.	Total Suspended Solids	APHA 23 rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	8.0	10.0	6.0	<100
3.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	4.0	6.0	12.0	30
4.	Chemical Oxygen Demand as COD	APHA 23 rd Edition 2017 5220 C (Pg. No.5-18 to 5-19)	mg/L	39.52	37.42	41.36	50
5.	Oil & Grease	APHA 23rd Edition 2017 5520 B (Pg. No.5-41 to 5-42)	mg/L	1.31	3.28	3.72	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

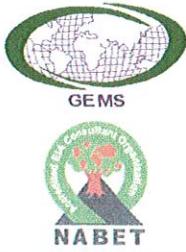
STP-2 90 KLD –Near Gunda Guest House

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist

Note:

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2. Water Samples will be destroyed after 150days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
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Website : www.globalmining.in



ANNEXURE-30

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	:	Waste Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	11.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000323F

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		1063	1064	
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	8.12	7.50	6.5 to 9.0
2.	Total Suspended Solids	APHA 23rd Edition 2017 2540 D (Pg. No.2-70 to 2-71)	mg/L	12.0	8.0	100
3.	Chemical Oxygen Demand as COD	APHA 23rd Edition 2017 5220 C (Pg. No.5-18 to 5-19)	mg/L	63.23	55.32	250
4.	Oil & Grease	APHA 23rd Edition 2017 5520 B (Pg. No.5-41 to 5-42)	mg/L	0.92	1.75	10

Note: BDL-Below detectable Limit.

INFERENCE: The Measured values are within the Limit.

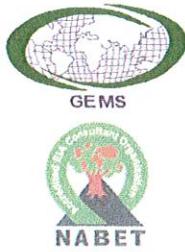
Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



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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/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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	11.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000324F

Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Danayakanakere Upstream	Danayakanakere Downstream	
	Sample code		1065	1066		
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.60	7.58	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (3 days at 20°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	2.5	2.0	3.0
3.	Fluorides as F	APHA 23 RD Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	0.28	0.31	1.5
4.	Arsenic as As	APHA-23 RD 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

Mallikarjun S.
Verified By
Mallikarjun S
Chemist



Note:

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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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	13.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Danayakanakere Upstream	Danayakanakere Downstream	
	Sample code			1065	1066	
1.	Dissolved Oxygen	APHA 23 RD Edition 4500 C (Pg. No.4-146)	mg/L	5.8	6.6	>5.0
2.	Color	APHA 23 RD Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	8	12	300
3.	Cyanides (as CN)	APHA 23 RD Edition 4500 CN- (Pg. No.4-45 to 4-46)	mg/L	BDL	BDL	0.05
4.	Phenolic Compounds (as C ₆ H ₅ OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	BDL	BDL	0.005
5.	Chromium (as Cr ⁶⁺)	APHA-23 RD Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<0.001	<0.001	1.0
6.	Anionic detergents (as MBAS)	APHA 23 RD Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	BDL	BDL	1.0
7.	Total Coliform Organisms					
	Total Coli forms	APHA 23 RD Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/ 100 ml	Absent	Absent	500
	Escherichia coli or E. coli	APHA 23 RD Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/ 100 ml	Absent	Absent	-

Note: BDL-Below detectable Limit

INFERENCE: The Measured values are within the Limit.

Rukmini G
Analysed By
Rukmini G
Chemist

Mallikarjun S
Verified By
Mallikarjun S
Chemist



- Recognised by Ministry of Environment, Forest and Climate Change for Laboratory
- Recognised by Government of Karnataka, Maharashtra, Goa for DGPS survey



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TC-5323

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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	11.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000325F

Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Tungabhadra dam Upstream	Tungabhadra dam Downstream	
			Sample Code	1067	1068	
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.75	7.52	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	2.0	2.5	3.0
3.	Fluorides as F	APHA 23 RD Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	0.18	0.19	1.5
4.	Arsenic as As	APHA-23 RD 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

Mallikarjun S
Verified By
Mallikarjun S
Chemist

Note:

- The result listed refers only to the tested samples & applicable parameters. Endorsement of products is neither inferred nor implied.
- Water Samples will be destroyed after 15Days, Minerals 3 Months, Filter papers & Thimbles After analysis Discard.
- 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.
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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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	13.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				Tungabhadra dam Upstream	Tungabhadra dam Downstream	
1.	Dissolved Oxygen	APHA 23 RD Edition 4500 C (Pg. No.4-146)	mg/L	6.4	7.0	>5.0
2.	Color	APHA 23 RD Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	6	8	300
3.	Cyanides (as CN)	APHA 23 RD Edition 4500 CN- (Pg. No.4-45 to 4-46)	mg/L	BDL	BDL	0.05
4.	Phenolic Compounds (as C ₆ H ₅ OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	BDL	BDL	0.005
5.	Chromium (as Cr ⁶⁺)	APHA-23 RD Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<0.001	<0.001	1.0
6.	Anionic detergents (as MBAS)	APHA 23 RD Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	BDL	BDL	1.0
7.	Total Coliform Organisms,					
	Total Coli forms	APHA 23 RD Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/ 100 ml	Absent	Absent	500
	Escherichia coli or E. coli	APHA 23 RD Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/ 100 ml	Absent	Absent	-

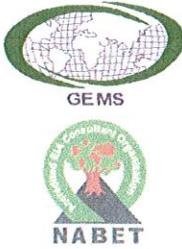
Note: BDL-Below detectable Limit

INFERENCE: The measured values are within the Limit.

Rukmini G.
Analysed By
Rukmini G
Chemist

Mallikarjun S.
Verified By
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TC-5323

ANNEXURE-33
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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	11.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022
14	Report Number	:	ULR-TC532322000000326F

Results

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				KempuHalla Upstream	KempuHalla Downstream	
		Sample code		1069	1070	
1.	pH	APHA 23rd Edition 2017 4500 H+ B (Pg. No.4-95 to 4-99)	-	7.80	8.15	6.5-8.5
2.	Biochemical Oxygen Demand as BOD (3 days at 27°C)	IS:3025 (part 44)-1993, Reaffirmed -2019	mg/L	3.0	1.5	3.0
3.	Fluorides as F	APHA 23 RD Edition 4500F-D (Pg. No.4-90 to 4-91)	mg/L	0.71	0.75	1.5
4.	Arsenic as As	APHA-23 RD 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.

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Analysed By
Rukmini G
Chemist

Mallikarjun S
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Note:

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ANNEXURE-33

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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	:	Surface Water
9	Date of Sampling	:	11.06.2022
10	Sample Received	:	11.06.2022
11	Date of Analysis	:	13.06.2022
12	Date of Analysis Completion	:	18.06.2022
13	Report Issue Date	:	04.07.2022

Sl. No.	Parameters	Protocol	Unit	Results		IS 2296 - 1982 CLASS -B
				KempuHalla Upstream	KempuHalla Downstream	
			Sample code	1069	1070	
1.	Dissolved Oxygen	APHA 23 RD Edition 4500 C (Pg. No.4-146)	mg/L	6.2	6.8	>5.0
2.	Color	APHA 23 RD Edition 2120 B (Pg. No.2-6 to 2-7)	Hazen	8	10	300
3.	Cyanides (as CN)	APHA 23 RD Edition 4500 CN- (Pg. No.4-45 to 4-46)	mg/L	BDL	BDL	0.05
4.	Phenolic Compounds (as C ₆ H ₅ OH)	IS:3025 (part 43)-1992, RA-2014, Chloroform extraction method	mg/L	BDL	BDL	0.005
5.	Chromium (as Cr ⁶⁺)	APHA 23 RD Edition-3500 Cr B (Pg. No.3-71 to 3-72)	mg/L	<0.001	<0.001	1.0
6.	Anionic detergents (as MBAS)	APHA 23 RD Edition 5540 C (Pg. No.5-55 to 5-57)	mg/L	BDL	BDL	1.0
7.	Total Coliform Organisms,					
	Total Coli forms	APHA 23RD Edition 9221-C (Pg. No.9-72 to 9-74)	MPN/ 100 ml	Absent	Absent	500
	Escherichia coli or E. coli	APHA 23RD Edition 9221-F (Pg. No.9-78 to 9-79)	MPN/ 100 ml	Absent	Absent	-

Note: BDL-Below detectable Limit

INFERENCE: The measured values are within the Limit.

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