

## **Monnet Ispat & Energy Limited**

(Joint Venture Company by AION & JSW Steel Limited) Monnet Marg, Mandir Hasaud, Raipur – 492101 (Chhattisgarh) CIN : L02710CT1990PLC009826, GST : 22AAACM0501D2ZJ Phone : +91 771-2471334 to 339, Fax : +91 771-2471250 E-mail : monnetraipur@aionjsw.in, Website : www.aionjsw.in

## SPEED POST

September' 30, 2019

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MIEL/MH/ENV/19-20/92 To **The Zonal Officer,** Central Pollution Control Board, Third Floor, Sahkar Bhawan, North T.T. Nagar, Bhopal (M.P.) 462003

## SUB:- ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2018–19, FOR ALL UNITS (Sponge, Power, Steel, Ferro & Rolling Mill).

Dear Sir,

Enclosed, please find herewith, the above-mentioned Environmental Statement, for the Financial Year 2018–2019, for your kind information and records please.

We trust that this is in line with your requirement.

Thanking you.

Yours faithfully, For MONNET ISPAT & ENERGY LIMITED

Tikam Chand Solanki Environment Manager

Encl: As stated above.

- Cc: (1) The Member Secretary Chhattisgarh Environment Conservation Board, Paryawas Bhawan, North Block, Sector 19, Atal Nagar Raipur 492002 (C.G.)
  - (2) The Regional Officer Commercial Complex, Housing Board, Kabir Nagar, RAIPUR (CG)

Corporate Office: MONNET HOUSE, 11 Masjid Moth, Greater Kailash Part II, New Delhi- 110 048 Phone : +91 11-2921 8542 / 43 / 44/ 45 / 46, Fax : +91 11 2921 8541, E-mail : aionjsw@aionjsw.in

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Regd. Office & Works: Monnet Marg, Mandir Hasaud, Raipur- 492 101 (Chhattisgarh)

# MONNET ISPAT & ENERGY LIMITED (INTEGRATED STEEL PLANT)

## **ENVIRONMENTAL STATEMENT**

FOR (Sponge, Power, Steel, Ferro, Rolling Mill)

[FINANCIAL YEAR - 2018-19]

MONNET ISPAT & ENERGY LIMITED VILLAGE – KURUD, CHANDKHURI MARG MANDIR HASAUD - 492 101 RAIPUR (CHHATTISGARH) Phone: 0771 – 2471335 to 339 Fax: 0771- 2471250

## SALIENT FEATURE OF THE INDUSTRY

NAME OF THE INDUSTRY	;	MONNET ISPAT & ENERGY LIMITED (SPONGE IRON DIVISION, POWER DIVISION, STEEL DIVISION, FERROALLOYS DIVISION, ROLLING MILL)
LOCATION	:	VILLAGE – KURUD CHANDKHURI MARG, MANDIR HASAUD RAIPUR PIN. 492101.
LONGITUDE		81 <sup>0</sup> 41" NORTH
LATITUDE		21 <sup>0</sup> 23" EAST
ELEVATION	1	304.8 MTRS. (APPROX)
WATER SOURCE	0	KHAROON RIVER/ BORE WELL
POLLUTION LEVEL	0	WELL WITHIN PRESCRIBED NORMS.
MANPOWER		Regular : 827 as on 31.03.2019
ASSOCIATED/ SURROUNDIN INDUSTRIES	G :	JINDAL STEEL & POWER LTD(M/c divi.) HPCL, FCI AND SOME WARE HOUSES etc

## ENVIRONMENTAL STATEMENT FORM-V (See rule 14)

## ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR, ENDING MARCH 31, 2019

## PART – A

NAME AND ADDRESS OF **OWNER / OCCUPIER OF** THE INDUSTRY

: SHRI RAVICHANDAR MOORTHY DHAKSHANA

: VILLAGE – KURUD CHANDKHURI MARG, MANDIR HASAUD RAIPUR PIN. 492101.

2. INDUSTRY CATEGORY

: LARGE SCALE INDUSTRY

PRODUCTION CAPACITY 3.

UNITS	Capacity (MT/Annum)
Sponge Iron –I	3 00 000
Sponge Iron - II, III &IV	3,00,000
Power –I	07.5 MW
Power –II	44.5 MW
Power –III	08.0 MW
Steel – II	2,50,000
Ferro Alloys – I	12,000
Ferro Alloys – II	32,000
Rolling Mill	1,50,000

### 4. DATE OF LAST ENVIRONMENT STATEMENT SUBMITTED : Dated 08.10.2018

Note: Part - A, is combined for all units (Sponge - I, II, III & IV Power - I, II & III, Steel - II Ferro Alloys - I & II and Rolling Mill)

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## <u>PART – B</u>

## WATER AND RAW MATERIAL CONSUMPTION

## I. WATER CONSUMPTION (M3 / DAY)

S.N.	Category	SID I	SID II, III & IV	Power I, II & III	Steel-I	Steel- II	Ferro I & II	Rolling Mill
а	PROCESS (Water get polluted & pollutants are easily Bio - degradable)	185.12 M³	255.15 M³	116 M³	NIL	NIL	NIL	NIL
b	TOTAL FOR COOLING PURPOSE	223.21 M³	298.75 M³	2179 M <sup>3</sup>	NIL	346 M <sup>3</sup>	142 M <sup>3</sup>	82.31 M <sup>3</sup>
с	TOTAL FOR DOMESTIC USE & OTHER	275 common for all units						

			OPERATING	PROCESS WATER CONSUMPTION PER MT OF PRODUCT		
S.N.	UNIT	UNIT PRODUCT DAYS (2018 - 19)		DURING THE PRIVIOUS FINANCIAL YEAR 2017- 18	DURING THE CURRENT FINANCIAL YEAR 2018- 19	
5.25	SID-I		336			
1	SID – II	SPONCE IPON	330	0.04 143	0.00 M3	
1.	SID – III	SPONGE INON	283	0.91 M	0.99 10	
	SID – IV		291			
2.	Power- I, II & III	ELECTRICITY	365	5.42 M <sup>3</sup>	3.42 M <sup>3</sup>	
3.	Steel II	BILLETS	331	1.22 M <sup>3</sup>	1.82 M <sup>3</sup>	
4.	Ferro I & II	FERRO & SILCO MANGNESE	365	2.5 M <sup>3</sup>	0.86 M <sup>3</sup>	
5.	Rolling Mill	Structural	329	0.38 M <sup>3</sup>	0.28 M <sup>3</sup>	

• Steel - I units were stopped throughout the year.

## II. RAW MATERIAL CONSUMPTION

TOTAL RAW MATERIAL CONSUMPTION FOR THE ALL UNITS FOR THE YEAR 2018 – 2019, AS GIVEN BELOW:

S.N	UNITS	UNITS NAME OF RAW MATERIAL	
		IRON ORE	162914 MT
	Sponge Iron – I	COAL	104051 MT
		DOLOMITE	9313 MT
		IRON ORE	157141 MT
	Sponge Iron – II	COAL	100792 MT
		DOLOMITE	9201 MT
1		IRON ORE	42321 MT
	Sponge Iron – III	COAL	26131 MT
		DOLOMITE	3110 MT
		IRON ORE	42605 MT
	Sponge Iron – IV	COAL	27010 MT
	-15	DOLOMITE	3380 MT
2.	Power Plant – WHRB- I, II, III &IV	STEAM FROM FLUE GAS OF SPONGE KILN NO. – I,II,III &IV	WHRB - 1, 170828.00 MT WHRB - 2, 177391.7 MT WHRB - 3, 31033.54 MT WHRB - 4, 31942.33 MT TOTAL - 411195.61 MT
2	Power Plant	COAL	129736.29 MT
э.	AFBC – I & II	CHAR	37840.36 MT
		SPONGE IRON FINES	127481.23 MT
4.		SCARP	20194.408 MT
	Steel - II	PIG IRON	12143.79 MT
	A REAL PROPERTY AND	MANGANESE ORE	44115.170 MT
		COKE	11955.930 MT
-	Ferro Alloys – I	DOLOMITE	1713.450 MT
5.	& II	QUARTZ	3939.340 MT
		COAL	13130.490 MT
		High MND. SLAG	25551.800 MT
6.	Rolling Mill	BILLETS	101014.17 MT

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## RAW MATERIAL CONSUMPTION PER MT OF PRODUCT:

				RAW MATERIAL CONSUMPTION PER MT OF PRODUCT		
S.N.	S.N. NAME OF N		NAME OF RAW MATERIAL	DURING THE PREVIOUS FINANCIAL YEAR 2017 -2018	DURING THE CURRENT FINANCIAL YEAR 2018 -2019	
	ODONOE		IRON ORE	1.52 MT	1.53 MT	
	SPONGE		COAL	1.09.MT	0.97 MT	
	IRON -1		DOLOMITE	0.06.MT	0.087 MT	
	CRONOF		IRON ORE	1.47.MT	1.48 MT	
	SPONGE		COAL	1.07.MT	0.95 MT	
1.	IRON - II	SPONGE	DOLOMITE	0.05.MT	0.086 MT	
8	CDONCE	IRON	IRON ORE	1.74.MT	1.87 MT	
	SPONGE		COAL	1.22.MT	1.07 MT	
	IRON - III		DOLOMITE	0.09.MT	0.125 MT	
	CDONCE		IRON ORE	1.74.MT	1.85 MT	
	IRON - IV		COAL	1.20.MT	1.02 MT	
			DOLOMITE	0.09.MT	0.133 MT	
2.	Power Plant Unit- LII &	ELECTRICITY	FLUE GAS OF SPONGE IRON KILN NO. –I, II, III & IV	Steam 4.17 Kg/Kwh	Steam 4.26 Kg/Kwh	
	III		COAL	0.86 Kg/Kwh	0.87 Kg/Kwh	
			CHAR	0.31 Kg/Kwh	0.25 Kg/Kwh	
			SPONGE IRON	1.019 MT	0.949 MT	
3.	Steel - II	Billets	SCARP	0.158 MT	0.150 MT	
			PIG IRON	0.049 MT	0.090 MT	
			MANG. ORE	1.496 MT	1.556 MT	
		FERRO	COKE	0.391 MT	0.422 MT	
		FERRO	DOLOMITE	0.057 MT	0.060 MT	
1	Ferro -1&	& SILCO	QUARTZ	0.170 MT	0.139 MT	
4.	П	MANGNESE	COAL/HIGH MnO SLAG	0.469 MT 1.103 MT	0.463 MT 0.901 MT	
5.	Rolling Mill	STRUCTURAL	BILLETS	1.05 MT	1.05 MT	

Note: Part B is combined for all units.

## PART - C

### WATER POLLUTION

## A). WATER POLLUTION:

There is no water used in our manufacturing process of Sponge Iron, Power plant, Steel division, Ferro Alloys division and Rolling Mill unit. It is only used for cooling purposes in re-circulating manners. Discharge water of plants is being collected in settling tanks and being used for plantation and water spraying on roads, yards etc. The Domestic waste water of the colony through the STP is ultimately used in plantation and water sprinkling on roads & yards for dust suppression purpose.

## B) AIR POLLUTION:

(i) Summarized Results of Ambient Air Quality Monitoring for the year 2018–19.

S.No.	MONITORING LOCATION	PM 10 (µg/M3)	PM 2.5 (µg/M3)	SO <sub>2</sub> (μg/m <sup>3</sup> )	Nox (µg/m³)	REMARKS
1.	Time Office Building (CAAQMS- I) (East side)	51.41	26.28	Min BDL Max. 4.90	Min BDL Max. 4.63	
2.	(CAAQMS- II) (West side)	51.63	25.62	Min BDL Max. 5.67	Min BDL Max. 22.66	During the Monitoring period all Pollution Control
3.	School Building (North side)	47.53	36.51	Min BDL Max. 7.50	Min BDL Max. 8.58	in operation.
4.	Steel Division -I (South side)	47.25	37.18	Min BDL Max. 7.40	Min BDL Max. 8.14	

NOTE :	C.P.C.B Sta	ndard (	$lg/m^3$ )
	PM 10	=	100
	PM 2.5	=	60
	SO <sub>2</sub>	=	80
	NOX	=	80
	BDI deno	tes <	10

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S.N.	NAME OF STACK	TEMP ( <sup>o</sup> C)	PM Mg/Nm <sup>3</sup>	REMARKS
1.	SID – I R.C.C STACK	117	41	
2.	SID – II R.C.C STACK	113	41	
3.	SID – III R.C.C STACK	117	41	
3.	POWER PLANT AFBC - I	111	40	
4.	POWER PLANT AFBC - II	78	29	
5.	Ferro Alloys – Deducting no. I & II	72	33	
6.	Ferro Alloys – Deducting no. III & IV	72	32	
7.	STEEL DIVIII	70	29	
8.	STEEL DIVIII	71	30	

## (ii) Summarized results of stack emission monitoring for the year 2018 - 19.

NOTE :

C.P.C.B STANDARD (mg/Nm<sup>3</sup>) PM = 50

Note: The Part C is combined for all units.

## PART – D

## HAZARDOUS WASTES

## AS SPECIFIED UNDER THE HAZARDOUS WASTES (MANAGEMENT HANDLING AND TRANSBOUNDARY MOVEMENT RULES, 2016)

HAZARDOUS	TOTAL QUANTITY				
WASTES	DURING THE PREVIOUS FINANCIAL YEAR 2017 – 2018	DURING THE CURRENT FINANCIAL YEAR 2018 – 2019			
FROM PROCESS (USED OIL)	5350 KG	4729 KG			
ION EXCHANGE RESIN CONTAINING TAXIC METALS	750 KG	NIL			
FROM POLLUTION CONTROL FACILITY	NIL	NIL			

Note: Only used oil is being generated from all the units, which is properly being handled and stored at their designated place and being sold to authorized parties as per the rules.

Note: The Part D is combined for all units.

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## SOLID WASTE

## PART – E

		TOTA	L QUANTITY (II	n MT)		
	DURING THE CURRENT FINANCIAL YEAR (2018 – 2019)					
	SID I,II &III	POWER I,II & III	STEEL – II	FERRO – II	ROLLING MILL	
(A) FROM PROCESS	Char – 52856.19 MT	Ash 54640 MT	Slag - 27352.13 MT	Slag – 40354.050 MT	End cutting 3844.52 MT	
(B) FROM POLLUTION CONTROL EQUIPMENTS	Bag filter	ESP	Dust Separation	Bag House	N.A.	
(C) (1) QUANTITY RE-CYCLED	N.A.	N.A.	N.A.	N.A.	N.A.	
(2) REUTILISED WITHIN THE UNIT.	35018.42 MT	NIL	N.A.	N.A.	3926.24 MT	
SOLD	9490.32 MT	N.A.	39281.42 MT	1252.10 MT	N.A.	
DISPOSED*	N.A.	157132 MT	0 MT	45704.87 MT	N.A.	

\* Supply to Cement & Bricks Plants.

Note: Part E is combined for all units.

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## <u>PART – F</u>

## CHARACTERISTICS AND DISPOSAL OF HAZARDOUS / SOLID WASTE For Sponge Iron Manufacturing:

In the process of manufacturing Sponge Iron, Coal is used as a source of Heat and as a reductant. During the process of making Sponge Iron, it generates Solid Waste in the form of Char, which is mainly used in our AFBC based power plant, as a fuel and also sold in market.

Fraction of Coal (called Coal Fines) after sizing and screening is being injected pneumatically into the Kiln, as a process requirement. A small quantity of Dolomite is being used as a De-sulphurizing Agent.

It is a coal based rotary kiln process. To produce Sponge Iron, the main raw materials are Iron Ore, Coal, Dolomite are fed to kiln, in fixed proportion. In this process Iron Ore of size 5x20mm along with coal of size 3x20mm and Dolomite are fed to the rotary kiln. The kiln rotates at a desired, fixed speed and this retains the iron ore for certain time duration in the kiln. At the feed end of kiln pre-heating of Iron Ore, Coal and Dolomite takes place. Then along the kiln length coal burns and the Iron Ore temperature increased up to 1000<sup>o</sup>c. Then Iron Ore starts reacting with carbon monoxide (derived from carbon in coal). The carbon monoxide reduces the Iron Ore into iron in solid state. The reaction takes place as shown below:

2C	+	O <sub>2</sub>	$\rightarrow$	200
Fe <sub>2</sub> C	D <sub>3</sub> + 3	CO	$\rightarrow$	2 Fe + 3 CO <sub>2</sub>
CO <sub>2</sub>	+ C		$\rightarrow$	2 CO.

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It is a pyro-metallurgical process, hence the rate at which reduction reaction proceeds depends on the following factors:

- Reaction temperature.
- Retention time &
- Turbulence inside Kiln.

Reduction of Iron Ore, in the Kiln, produces Magnetic Fraction, containing Iron and Non-Magnetic matter consisting of Coal Ash and Mixture of CaO and MgO. The burnt Coal termed as Char is being used in AFBC based Power Plant as a fuel etc.

#### For Power generation (WHRB & AFBC):

Sponge iron is produced by heating iron ore with coal and other additives under controlled conditions in rotary kilns. This process generates 75000-90000 Nm3 /Hr. of flue gases at 850-950 .C

To recover the heat of the hot flue gases coming out of the rotary kiln by passing them through Waste heat recovery boiler (WHRB). The output of boiler is used to generate electricity of 7.5 MW capacity. Flue gas exhaust by a boiler is passed through economizer, ESP and ID fan and discharged to the atmosphere through the stacks with emission well within the norms. While in AFBC, generated solid waste from the sponge iron manufacturing process, which is known as char and coal in specific proportionate, are being used for generating power. By the help of Installed ESPs, ID fans emission from stacks are being maintained well within the norms. Dust particles are being arrested by ESPs and sent to ash silos.

The generated ash from power plant is being utilized for making bricks in our own bricks plant, supply to Cement Plants, others Bricks plants and filling the low-lying area and abounded pit.

SL.No.	PARAMERTER	RESULT
1.	SiO <sup>2</sup>	70.20%
2.	CaO	1.11%
3.	MgO	1.24%
4.	Al <sup>2</sup> O	4.35%
5.	Fe <sup>2</sup> O	8.21%
6.	MnO	N.A
7.	Unburned	2.14%

#### For Steel Manufacturing:

In the process of steel making when any ferrous scrap is melt it forms liquid metal which due to its heavier specific gravity settle down on the bottom of the furnace and lighter part which may be rust, dust, etc shall float over the liquid metal due to its weight. This lighter part of rust dust is separated out with the help of spoons and collected into a pot. This becomes solid in course of time, which is black in color and is of no use. This is called as "slag", which is neutral by nature .This solid waste is utilized for filling low-lying areas (especially in road formation purposes) in house premises.

#### For Ferroalloys Manufacturing:

The generated slag from Ferro Alloys manufacturing are being stored in slag yard scientifically and being utilized for filling the low-lying area/ abandoned pit and for road preparation purposes.

#### For Rolling Mill Manufacturing:

Metallic scrap, scales and Mill cutting are being recycled and reused in the process. After PGP operation, generated ash shall be disposed off in existing ash dump area.

Note: Part H is combined for all units.

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## PART – G

## IMPACT OF POLLUTION CONTROL MEASURES IN CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON THE COST OF PRODUCTION

As all the emission parameters are being maintained well within the prescribed norms, there is no adverse effect on the conservation of natural resource.

Monnet's continuous efforts for the betterment of the Environment, by the adopting zero waste concept and conservation of natural resources, resulting significant improvement reflecting on Pollution control measures as well as on the cost of Productions.

In this direction, by the installation of Waste Heat Recovery Boilers, hot gaseous discharged from Kilns are being used for power generation, resulting in saving of coal.

In sponge iron manufacturing, char is being generated as a solid waste, which are being used as a raw material (fuel), in our AFBC based power plants, resulting in saving of coal..

Fly ash generated from Power Plants is being used for making bricks in our own bricks Plant, which are being used in our Civil Constructions & repairing work inside the premises, balance is being supplied to others bricks plant, Cement plants and filling abandoned mines/queries of surrounding area.

Solid waste generated from Steel Plant & Ferro Alloys unit is called slag, are being used for making approach roads/by pass roads, filling low laying area etc.

Apart from it, discharge water from all units, is being collected in settling tanks and after filtration same is being used for Horticulture purpose, water spraying on all internal & external roads, yards, to control the fugitive emission generated by vehicle movements. While Domestic effluents of colony is also being treated in our Sewerage Treatment Plant and being used for Plantation purpose, resulting saving of water.

Extensive tree Plantation & Scientifically arranged green belt developed by us, are also supporting, to control Air Pollution and reducing atmospheric temp. of surrounding area...

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## PART - H

### ADDITIONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION ABATMENT OF POLLUTION, PREVENTION OF POLLUTION

#### Additional Measure has been taken for improvement of environment:

Apart from Installation & effective operation of Air & Water Pollution control equipments, following additional measures have been taken by Monnet for Environment Protection: -

- (1) Augmentation of ESPs of WHRB I, WHRB II, WHRB III & IV (Common) AFBC – I & II, Ferro Alloy Stacks for achieve and maintain the Stack emission below the 50 Mg/Nm<sup>3</sup> as instructed by CPCB as well as by CECB.
- (2) On line monitoring systems Opacity meter installed i.e. AFBC I, II, WHRB I, II, III & IV for continuous monitoring of SPM/ Sox/ NOx/ Co for more strict watch on stack emission.
- (3) For better control on fugitive emission, Aqua Dyne water spray & Dry fog Dust suppression system installed in SID's Raw Material Plant and Coal Handling Plant of Power Plant.
- (4) Installation of dust extraction system with movable hoods in all f/cs of steel divi.-II
- (5) Extensive tree Plantation and development of green belt & lawns, in & around the Plant premises. There are about 94,580 Plants, Nos. of lawns have been developed in an area of approx 36 hectares.
- (6) Adoption of Good House Keeping technology, in which proper & systematic stacking & movement of raw materials, finished goods; solid waste etc. has been implemented. Regular water spraying on roads, yards by water tankers to control fugitive emission.
- (7) Pipe line laid down all around the plant with more than 240 No. permanent fixed Water sprinklers, which are intermittently water spraying on their area, to suppress The dust, generated during Vehicle movement.
- (8) All the internal main & bypass roads and external road about 3km long since Mandir Hasaud Chauk to Village Kurud have been made of concrete (RCC) with Proper Street lighting.
- (9) Rain Water Harvesting: Rain water harvesting system constructed in our plant at Admn Building, Steel – II office cum. Store building, Near Bachalar Hostel, Monnet DAVP School & Old Mahendra Puram Colony.

(10) Online stack & Ambient air quality monitoring system installed.

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(11) Stack emission of all ESPs below 50 mg/Nm<sup>3</sup> consistently mainatained, round the Clock.

(12) Maximum utilization of discharge water for horticulture purpose and water Spraying/sprinkling on roads, Yards.

### Note: Part H is included all units

## PART – I

#### OTHER PARTICULARS OF IMPROVING OF QUALITY OF THE ENVIRONMENT

#### POLLUTION CONTROL EQUIPMENT

To control pollution MIEL has already installed various Air & water control equipment as ESP, Wet Scrapper, Dry Fog Dust suppression system, Aqua Dyne water spray system, Bag House and Cyclone, STP etc at required locations and these are working effectively. Efficiency of all equipments are around 99 %. A group of technical person & engineer is always ready to work (to check any leakage & maintenance of pollution control equipment).

We have installed online continuous monitoring system (opacity meter) with Sox/NOx/CO<sub>2</sub> continuous monitoring system at our all stacks to close watch of stack emission.

Regular checking and preventive maintenance of all the pollution control equipments are being done as per schedule. All preventive measures have been taken regarding maintenance of ESPs, De-dusting systems and cleaning of bag houses and air purging system done on weekly basis for effective operation of the same.

In order to further control fugitive emission, Dry Fog dust suppression system and Aqua Dyne dust control system are being installed in our Raw Material Plant & Coal handling plant.

We have made five pairs settling tanks at different location to collect the discharge water for settling down the solids from discharged water and the filtered water is being used for horticulture and spraying by Sprinklers & Tankers on roads and yards.

We have provided Rain Water Harvesting Systems at our Admn. Building & Steel – II office cum. Stores Building to collect the rain water and recharge the ground water.

#### HOUSE KEEPING

Good house keeping contributes greatly to efficient operations, improved employee morale, better productivity and reduction of accidents. House keeping standards reflect an organization's work culture.

Good house keeping can only be achieved by proper planning. This includes a wellplanned process layout, orderly arrangement of equipment; systematic material storage stacking and movement; and waste disposal; coupler with day-to-day maintenance of cleanliness and tidiness.

\*All the internal roads in the plant premises have been made of concrete (RCC) & tar felted and are being watered and cleaned on regular basis.

\*Sufficient no. of water sprinklers has been installed, at required locations.

\*2km long water pipe line with more than 160 nos. permanent fixed water sprinklers lay down around the power plant and SID-I, II & III area for intermittently water spraying.

\*Water tanker has also engaged for water spaying round the clock on all the internal road as well outside roads, yards.

#### PLANTATION

Unquestionably, like any other industry, **MONNET ISPAT & ENERGY LIMITED**, is making sincere efforts for conservation and protection of the environment. In this stream greenery is the need of the hour in Monnet Ispat & Energy Limited and in the past years, it has become the key promising activity in and around the campus and new heights has been attained in this field. All these efforts were made in view to not only reduce the pollution, but also to ensure our commitment towards the betterment of the environment.

In continuation to the efforts of greenery proposed target is 5000 more saplings will be added in the plantation program, during the year 2019 – 2020.

The species so far planted in and around MIEL campus has shown tremendous vegetative growth, which has contributed, considerably in a quantitative and qualitative increase in greenery.

Besides the above, some other spices *viz.*, tamarind (imli), mangium (an Australia originated plant which in terms as wonder plant, worldwide) and Eucalyptus were also taken into consideration in the campus for plantation during the forthcoming year's plantation program. The selection of species were made by taking into consideration the available resources and limitations *viz.*, type of soil, availability of rain water and sub-surface water (ground water), disease infection and pest infestation, nutrient availability and finally the prevailing climatic conditions, in and around the MIEL campus.

Besides agro-forestry efforts, ornamental efforts were also made in the due course, which is resulting into increasing the total amount of greenery in Monnet Ispat & Energy Limited campus as well surrounding area.

Plantation efforts will be carried-on to the maximum possible extend in and around Monnet Ispat & Energy Limited campus. In this direction, we are making efforts for avenue plantation from MIEL to Mandir Hasaud, besides the road, Near by villages and

their school, community building etc. which shows our sincerity in making efforts for continual improvement in quality of environment not only inside the MIEL campus, but also in the adjacent area as well as little district of Chhattisgarh state. Out all these efforts have been made in totally different manner than the other as we are having a well developed nursery, inside our campus, where we grows all the spices to be taken up under the plantation program. Our effort is not only economical, but also viable and easily adoptable as the saplings are well familiar to survive and grow in the same atmosphere prevailing in the campus.

In all our whole efforts made towards the continuous improvement in the quality of environment in Monnet Ispat & Energy Limited, has resulted in feeling the continuous improvement in comparison to the past.

#### SOCIO ECONOMIC DEVELOPMENT

**MONNET** has committed it self for growth and socio economic development of not only surrounded area but also in the state.

To keep this view Monnet has done several social works inside village area like

- 1. Drinking water arrangement (Provision of Bore wells in villages/Recharging of old bore wells)
- 2. Construction of cement roads from Mandir Hasoud chowk to Village Kurud.
- 3. Plantation at surrounding villages and near by areas.
- 4. Monnet D.A.V School
- 5. A full-fledged 13 bed hospital /Mobile dispensary
- 6. By set a fire fighting station
- 7. Provision of Ambulance.
- 8. Training of stiching/computer for surrounding villages' ladies.
- 9. Help to poor person / family.
- 10. Provision of street lights from Mandir Hasoud to village Kurud.

In town area:-

- 1. Several square development
- 2. Plantation
- 3. Beautification of airport.
- 4. Park development and beautifications.

The salient features of green belt are as follows: -

- Selection and diversity of plant species as per guidelines of CECB, Raipur and MoEF, New Delhi, Central Pollution Control Board.
- Plantation more than 5000 this year.
- Development of a lawns area at different units, colony etc.