

Ref: TML/KGP/ 254 / 2015-16

Date:-23. 12.2015

To
Dr. V.P. Upadhyay
Director (S)
Government of India
Ministry of Environment & Forests
Eastern Regional Office
A/3, Chandrashekharpur
Bhubaneswar – 751 023
Odisha

Dear Sir,

Sub: Six monthly Compliance Report for existing Pig Iron Plant at Mahespur, Kharagpur

Please find enclosed herewith the Six Monthly Compliance report (April'15 to September'15) for existing **Pig Iron plant** (Environmental clearance no:- J-11011/601/2008-IA II (I) dated June24, 2009) for the condition stipulated in Environment Clearance to the Tata Metaliks Ltd at Mahespur, Kharagpur.

1. Pig Iron Production-'Fy-2010-11'- 306190T,'Fy-2011-12'-287501T,'Fy-2012-13'- 288511T. 'Fy-2013-14 '- 302,998.90T. **Fy 2014 -15*- 2,92,575.179 T**, Fy-2015-16*(April 15* to September 15*) - **1,49,876.166 T**
2. **Sinter Production-** 'Fy 2014-15'- 4,76,061.369 T 'Fy-2015-16'(April 15 – September 15) - **235197 T**
3. Water Consumption of 'Fy2015-16 (Apr 15 to Sept 15*)'- **340236 KL.**
4. Power Consumption of April 15* to September 15*:- **26154100 Kwh,**

The copy of the compliance report is being sent to you in hard copy as well as soft copy and same also will be uploaded in the Tata Metaliks Ltd website.for your kind perusal.

Thanking you

Yours sincerely
For Tata Metaliks Limited

Debasis Misra
VP (Operation)

Enclosure – As above

A	SPECIFIC CONDITIONS for enhancement of (3,20,000TPA to 3,45,000TPA) Pig Iron	Compliance Status
i	On-line stack monitoring facilities for all the stacks and sufficient air pollution control equipments viz gas cleaning system, dust catcher, bag filters etc. shall be provided to control emissions from the blast furnace below 100 mg/Nm ³ .	On-line stack monitoring facilities have been installed in all the stacks. Online monitoring facilities provided at Sinter Plant and MBFs. The monitoring carried out by West Bengal Pollution Control Board in April 2015 and September 2015 reveals that the levels of gaseous emissions from all the stack are within 100 mg / Nm ³ . Monitoring of gaseous emissions is also regularly being done for the DG set (2 x 1250 KVA) and found within 150 mg/Nm ³ as prescribed by West Bengal Pollution Control Board. We have also planned to carry out stack monitoring by Moef Approved agency within December 2015.
ii	In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Dust extraction system with bag filters shall be provided at material handling areas, crushers, hoppers, vibratory screens, transfer points etc. All the conveyors shall be covered with GI sheets to prevent fugitive emissions. Further, specific measures like water sprinkling around the coal stockpiles and asphaltting or concreting of the roads shall be done to control fugitive emissions.	Regular monitoring of secondary dust level is being carried out in the work zone viz., near Stand type Pig Casting Machine (SPCM), Main Sinter Building ESP areas, Cast House #1 & 2 and Bunker House # 1 & 2. The monitoring indicates that monitoring of SPM, RPM, SO ₂ and NO _x are being carried out. We have also planned to carry out stack monitoring by Moef Approved agency within December 2015.
iii	Data on ambient air quality, stack emissions and fugitive emissions shall be regularly uploaded on the website of the company and submitted on-line to the Ministry's Regional Office at Bhubaneswar, West Bengal Pollution Control Board (WBPCB) and Central Pollution Control Board (CPCB) as well as hard copy once in six months. Data on SPM, SO ₂ and NO _x shall also be displayed outside the premises at the appropriate place for the general public	Monitoring data on ambient air quality, stack emissions and fugitive emissions are now being uploaded in the website of the company (www.tatametaliiks.com). The status of Display board has been provided at the Main Gate wherein different environmental monitoring data has been displayed as per the format provided by the West Bengal Pollution Control Board. It has also been provided the name & contact number of senior officers who would be giving the clarification to the general public in case of seeking & any clarification.
iv	Secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.	Regular monitoring of secondary dust level is being carried out in the work zone viz. ., near strand..PCM , Main Sinter Building, ESP areas, Cast House #1 & 2 and Bunker House # 1 & 2. It has included all the critical areas for monitoring of secondary emissions including a regular water sprinkling by providing fixed type water sprinklers covering of all the iron ore fines, coke etc. were Dry fog system has also been provided in Ground Hopper and in Bunker House area of RMHS # 1 & 2. We have also planned to carry out stack monitoring by Moef Approved agency within December 2015.
v	Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land. Vehicular emissions should be regularly monitored	Besides road transport, raw materials mainly being brought by rake. The road leading from NH#6 up to the project site (4.5 km) has already been approved and under construction for black topping along with concrete drainage with an estimated cost of Rs. 10 crore (approx) of which the Tata Metaliks has agreed give Rs. 1 crore for the purpose. Tata Metaliks is regularly ensuring to have valid PUC of all the vehicles which are coming inside the plant. It already carried out a survey on traffic density of the

		area to ascertain the viability of the approach road as per IRC guidelines.																		
vi	Effluent Treatment Plant (ETP) shall be installed for the treatment of process water. All the wastewater generated shall be treated, recycled and reused either in the process or for dust suppression, green belt development and various other activities at the site. No wastewater shall be discharged outside the factory premises and 'Zero' discharge shall be adopted	Water from MBE 1& 2, and GCP Plant etc. is treated and the treated water is being recycled for different processes in the plant viz., Pig quenching, slag granulation and dust suppression. Waste water from canteen is also being treated and used for dust suppression and plantation. Similarly, storm water is also collected from different catchments from the plant and is stored in underground tanks. The stored water is recycled in the plant for various uses. The plant is not discharging any plant effluent into the nearby main course.																		
vii	The company shall obtain the permission for drawl of ground water from CGWA/CGWB	As per the CGWA implementation of revised guidelines for grant of NOC for ground water withdrawal- reg. Tata Metaliks Ltd has taken permission form SWID.																		
viii	The solid materials collected from pollution control equipment shall be suitably stored and supplied to nearby pig iron/steel plant having sinter plant. The project authorities shall make the agreement with user of Coke, coal fines and iron ore fines and copy of the agreement shall be submitted to Ministry's Regional Office at Bhubaneshwar. Used oil shall be sold to recyclers and reprocessors only.	<p>Used oil (2070 kg from Apr 15 to Sept 15) and spent resin are generated as per condition based monitoring through ferrographic analysis and physical checking. The declaration of waste oil generation is done through Form-3 and disposed off to the authorized recycler</p> <table border="1"> <thead> <tr> <th>Type of solid waste</th> <th>Generation (Approx TPA)</th> <th>Mode of utilization</th> </tr> </thead> <tbody> <tr> <td>Granulated Slag</td> <td>126095</td> <td>100 % slag is sold to cement industries</td> </tr> <tr> <td>Iron ore fines</td> <td>15871</td> <td>100% reused in the sinter plant</td> </tr> <tr> <td>Coke fines</td> <td>4318</td> <td>100% reused in the sinter plant</td> </tr> <tr> <td>Used oil</td> <td>5866kg</td> <td>Sold to authorized recycler Mis East End petrochemical Private Limited</td> </tr> <tr> <td>Spent ion exchange resin</td> <td>1210 kg (once in five year)</td> <td>Sold to authorized recycler M/s Ramkey</td> </tr> </tbody> </table>	Type of solid waste	Generation (Approx TPA)	Mode of utilization	Granulated Slag	126095	100 % slag is sold to cement industries	Iron ore fines	15871	100% reused in the sinter plant	Coke fines	4318	100% reused in the sinter plant	Used oil	5866kg	Sold to authorized recycler Mis East End petrochemical Private Limited	Spent ion exchange resin	1210 kg (once in five year)	Sold to authorized recycler M/s Ramkey
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ix	The blast furnace slag shall be granulated and sold to the cement manufacturing units for further utilization. All the other solid waste including broken refractory mass shall be properly disposed off in environment-friendly manner. A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	100% Blast furnace slag is being sold to the Cement Manufacturers..																		
x	Green belt shall be developed in 33 % area in and around the plant as per the CPCB guidelines in consultation with DFO.	Plantation has been raised inside the plant. On and above 33% of the total plant area. The different species planted are Polythea longifolia, Casul.lina aquisetifolia, Alstonia scholaris Teccoma stans, Azdirachta indica, Dalbergia sisoo, Mimosops elengi, Cassia fistula, etc.																		
xi	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel sector shall be strictly implemented	The status of implementation of the recommendation in the Charter on Corporate Responsibility for Environment Protection (CREP) for the steel sector is enclosed in Annexure III.																		
xii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Increase in production capacity is mainly on account of improved operations / process improvement resulting in 'Enhancement of Production' and hence it is not an Expansion Project. Thus these requirements are not applicable in the present instance																		

	GENERAL CONDITIONS for enhancement of (3,20,000TPA to 3,45,000TPA) Pig Iron	Compliance Status
i	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB) and the State Government.	Tata Metaliks has received Consent to Operate for both MBF and Sinter plant from WBPCB and valid up to 30.11.2018
ii	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	Tata Metaliks has applied to the Ministry for capacity expansion from 345000 TPA to 500000TPA: In which TOR has been issued on 19.05.2014
iii	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May, 1993 and standards prescribed from time to time. The State Pollution Control Board (SPCB) may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit.	On-line stack monitoring facilities have been installed in all the stacks. Online monitoring facilities provided at Sinter Plant and MBFs. It is also monitoring stack emission by West Bengal Pollution Control Board and also through a 3rd party consultant viz., M/s Indicative Consultants, Kolkata. Please see the data in Annexure E The levels of gaseous emissions from all the stack are within 100 mg / Nm ³ Monitoring of gaseous emissions is also regularly befoog done from the DG set (2x1250 KVA) and found to be within 150 mg/Nm ³ as prescribed by West Bengal Pollution Control
iv	At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO _x are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office and the SPCB / CPCB once in six months	Ambient air quality is being monitored at two places i.e., near ADM building and near Guest House for PM ₁₀ , PM _{2.5} , SO ₂ and NO ₂ . The data of June, 2015 indicate that these parameters are within the limit in respect of 24 hour/5 standards, and two places i.e. Material Gate & Upcoming power plant area on September 2015 as per EP Act by SGS. The data of indicate that these parameters are within the limit. Please see Annexure E
v	In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Further, specific measures like water sprinkling around the coal stockpiles and asphaltting or concreting of the roads shall be done to control fugitive emissions.	Regular monitoring of secondary dust level is being carried out. work zone near Cast House, Bunker House and SPCM and SPM, RPM, SO ₂ and NO _x concentrations in the work zone monitored by NABL & WBPCB approved agency M/s Indicative consultant on June 2015 are within the prescribed limit. The project has made concrete roads and water sprinklers are used for dust suppression, dry fog system also used in both RMHS ground hopper and transfer House. Please see Annexure E.
vi	Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended form time to time.	The water consumption from 'Apr to Sept 15' for the existing plant is 340236 KL. ETP has been installed to treat process water and it has

	The treated wastewater shall be utilized for plantation purpose	been informed that the treated effluent is being used for different processes in the plant. Analysis of drinking water as per the direction of Public Health Engineering Department, Govt of West Bengal supplied to Canteen, Union Room, Mechanical Room, Power House and RMHS is being done. Similarly, analysis of wastewater of Wastewater Pond, effluents of Emergency Discharge and Canteen outlet is being done. All the parameters of effluents quality are meeting the prescribed standards														
vii	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	As per the data provided on 24 th June 2015 by Indicative Consultant, the noise level is within the permissible limit. <table border="1"> <thead> <tr> <th>Sl no</th> <th>Area / Location</th> <th>Ambient Limit (dBA)</th> <th>Result (dBA)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ADM Building (Near Main Gate)</td> <td rowspan="3">75 dBA (day time)</td> <td>60.1- 62.5</td> </tr> <tr> <td>2</td> <td>Material Gate</td> <td>65.2- 69.3</td> </tr> <tr> <td>3</td> <td>Near Cycle Stand</td> <td>63.1- 64.5</td> </tr> </tbody> </table>	Sl no	Area / Location	Ambient Limit (dBA)	Result (dBA)	1	ADM Building (Near Main Gate)	75 dBA (day time)	60.1- 62.5	2	Material Gate	65.2- 69.3	3	Near Cycle Stand	63.1- 64.5
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3	Near Cycle Stand		63.1- 64.5													
viii	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Regular occupational health checkup April 15 to September 15 was carried out. The investigation includes blood test, audiometric, PFT and eye test including general health checkup. Please see Aneexure-3.														
ix	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table	A pond has been constructed to store both surface and rooftop rain water. This pond is sufficient enough to collect the rainwater from entire catchment of the plant area. The total quantity of rain water which can be stored in the rainwater harvesting pit is 0.03 million m ³ .														
x	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. Suggestions made during the public hearing shall be implemented.	The project has been taking up community welfare programmers regularly which includes drinking water supply, Livelihood & Entrepreneurship, Improve village infrastructure & sanitation, health checkup, organizing camps for awareness on addiction, maternal health and hygiene, sex education and blood donation. Please see Annexure 5.														
xi	Adequate fund shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be judiciously utilized to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. The funds so provided shall not be diverted for any other purpose.	The details of expenditure for the year 2015-16(Apr to Sept 15) towards pollution control is Rs.1.07 crore of which Rs.20.00 lakh has been spent RCC construction of internal roads, yards & drains resulting in reduced dust generation and Covering raw materials at yard & material transfer & discharge points with tarpaulin at RM yard for minimizing fugitive emission cost is Rs.17lakhs. Please see Annexure 1														

xii	The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly	The condition is being complied.
xiii	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.	The condition was complied and it was informed through advertisement in English & Bengali news papers that Ministry Of Environment and Forests accorded environmental clearance (No- J-11011/601/2008-IA II (I) dated June24, 2009)
xiv	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	The plant is already under operation

Annexure E

Ambient Air Monitoring.

Sl	Area / Location	Analysis Done By	Date Of Sampling	SO2	PM10	PM2.5	O3	C6H6	NH3	NO2	CO	Bennzo Pyrene	As	Ni	Pb
1	Material Gate	SGS India Pvt Ltd	17.09.2015 & 18.09.2015	BDL	35.4	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2	Upcoming Power Plant	SGS India Pvt Ltd	17.09.2015 & 18.09.2015	BDL	36.4	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.10
1	Near ADM Building	Indicative Consultant	22.06.2015 & 23.06.2015	20.98 (Avg)	72.62 (Avg)	26.90 (Avg)	-	-	-	39.38 (Avg)	-	-	-	-	-
2	Guest House	Indicative Consultant	22.06.2015 & 23.06.2015	20.97 (Avg)	79.28 (Avg)	29.73 (Avg)				38.64 (Avg)					

Particulate Matter –

Sl	Analysis Done By	Date Of Sampling	Common Stack of Boiler 1&2	Hot Blast Stove 1	Hot Blast Stove 2	DG-1	DG-2
1	West Bengal Pollution Control Board	20.04.2015 & 21.04.2015	5.94 mg/Nm ³	2.09 mg/Nm ³	2.72 mg/Nm ³	26.55 mg/Nm ³	23.23 mg/Nm ³
2	Indicative Consultant	22.06.2015 & 23.06.2015	37 mg/Nm ³	24 mg/Nm ³	30 mg/Nm ³	104 mg/Nm ³	110 mg/Nm ³
3	West Bengal Pollution Control Board	14.09.2015 & 15.09.2015	13.72 mg/Nm ³	14.86 mg/Nm ³	23.71 mg/Nm ³	8.65 mg/Nm ³	43.20 mg/Nm ³

Work Zone Air

Analysis Done By	Area	Month	SPM(mg/m ³) Limit- 10	RPM(mg/m ³) Limit- 5	SO ₂ (mg/m ³) Limit- 5	NO ₂ (mg/m ³) Limit- 6
Indicative Consultant	Cast House 1	June 2015	0.829	0.312	0.031	0.042
	Cast House 2		1.025	0.293	0.030	0.047
	Bunker 1		0.819	0.227	0.031	0.046
	Bunker 2		1.219	0.307	0.031	0.045
	SPCM		0.883	0.272	0.030	0.043

Annexure 1

Expenditure on Pollution Control From April'15- Sept'15 in Tata Metaliks Ltd

Expenditure on Pollution Control From April'15- Sept'15 in Tata Metaliks Ltd		
Sl No	Initiatives taken	Expenditure (Rs in Lakhs)
1	Maintenance of head & tail ESP & bag filters at sinter plant	8.70
2	All stacks emission, ambient, work zone air, effluent, drinking water, noise sampling & analysis,	1.90
3	Repair & maintenance of dry fog dust suppression system at RMHS	1.60
4	Manpower cost for installing water sprinklers at railway yard	2.52
5	Operation and Maintenance of existing water and environmental projects	2.11
6	Construction of waste water recirculation system with settling tanks & drainage system at sinter plant and TML gate No-2 for using recycled water at sinter plant & for dust suppression purpose.	10.50
7	Industrial water treatment in the entire plant	10.50
8	Drain & vat cleaning all plant locations	2.50
9	Road sweeping & water spraying with mobile tanker	5.55
10	Cleaning of sludge tank & reusing at sinter plant	6.30
11	RCC construction of internal roads, yards & drains resulting in reduced dust generation	20.00
12	Covering raw materials at yard & material transfer & discharge points with tarpaulin at RM yard for minimizing fugitive emission & reducing unwanted moisture in raw materials	16.72
13	Construction of in-house oil separation unit near RMD office	0.25
14	Development and maintenance of greeneries	17.92
	Grand Total	107.07

**Annexure 2
CREP Guidelines**

The plan for the implementation of the recommendations made for the steel plants in the Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines is presented in **Table-1**.

TABLE-1
PLAN FOR THE IMPLEMENTATION OF THE RECOMMENDATIONS OF
CREP GUIDELINES FOR INTEGRATED ISPAT & POWER INDUSTRY

Sr. No.	CREP Recommendations	Action Plan
1	<p>Coke Oven Plants</p> <p>To meet the parameters PLD (% leaking doors), PLL (% leaking lids), PLO (% leaking off take), of the notified standards under EPA within three years. Industry will submit time bound action plan and PERT Chart along with the Bank Guarantee for the implementation of the same.</p> <p>To rebuild at least 40% of the coke oven batteries* in next 10 years.</p>	Not applicable.
2	<p>Steel Melting Shop</p> <ul style="list-style-type: none"> • Fugitive emissions <p>To reduce (including installation of secondary de-dusting facilities)</p>	Not applicable.
3	<p>Blast Furnace</p> <p>Direct inject of reducing agents</p>	There is no direct injection of reducing agent in the Blast furnace.
4	<p>Solid Waste / Hazardous Waste Management</p> <p>Utilization of 100% Steel Melting Shop (SMS) / Blast Furnace (BF) Slag</p>	100 % Granulated slag is sold to cement industries.
5	<p>Hazardous Wastes</p> <ul style="list-style-type: none"> • Charge of tar sludge / ETP sludge to Coke Oven. • Inventorization of the Hazardous Waste as per Hazardous Waste (M&H) Rules, 1989 as amended in 2000 and implementation of the Rules. (tar sludge, acid sludge, waste lubricating oil and type fuel falls in the category of Hazardous Waste) 	<p>Not applicable</p> <p>Used oil/ spent oil are being sold to authorized recycler. The declaration of waste oil generation is done through Form-3.</p>
6	<p>Water Conservation / Water Pollution</p> <ul style="list-style-type: none"> • To reduce specific water consumption to 5 m³/t for long products and 8 m³/t for flat products. • To operate the CO-BP effluent treatment plant efficiently to achieve the notified effluent discharge standards. 	<p>Not applicable</p> <p>However as part of water conservation following measures is taken.</p> <p>Water conservation is achieved through 4 R strategy, namely Reduce, Reuse, Recycle and Rain water harvesting, In Reduce step loss reduction is achieved by arresting leakages, installation of nozzles and sprinklers in flexible rubber hoses. In reuse and recycle step recycling of process water and waste water in closed loop is done with zero discharge. Waste water recirculation plants at MBF-1, MBF-2, power house and sinter plant are in operation to reuse the waste water, pig quenching, slag granulation and road dust suppression. In rain water harvesting step already 2 rain water harvesting systems are in operation and others are under planning.</p> <p>Waste water generated from blast furnace gas cleaning plant is treated in thickener or</p>

Sr. No.	CREP Recommendations	Action Plan
		clarifier by adding flocculating agent and clear water is recycled to the GCP recirculation tank for reuse. BFG seal pot drain water at sinter plant is recycled & used for dust suppression using high capacity sprinklers.
7	Installation of Continuous stack monitoring system & its calibration in major stacks and setting up of the online ambient air quality monitoring stations by June 2005	Continuous online stack monitoring has been installed at all the stacks.
8	To operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect. Compliance report in this regard be submitted to CPCB / SPCB every three months.	Existing 6 monthly compliance reports is being submitted regularly to MoEF.
9	To implement the recommendations of Life Cycle Assessment (LCA) study sponsored by MoEF.	Not applicable
10	The industry will initiate the steps to adopt the following clean technologies/measures to improve the performance of industry towards production, energy and environment	In house action has been taken to improve the efficiency of the pump, reduce the resistance of the pipe line, use of VVVF drive and improve the efficiency of the blowers to reduce the energy consumption. Further to this energy audits shall be carried out to improve the performance.
	Energy recovery of top Blast Furnace (BF) gas.	BF gas cleaned in GCP and is used as fuel in CPP, stove, sinter and annealing furnace (TMDIPL) and ladle heating.
	Use of Tar-free runner linings.	Not applicable
	De-dusting of Cast House at tap holes, runners, skimmers ladle and charging points.	This is being planned during the expansion projects.
	Suppression of fugitive emissions using nitrogen gas or other inert gas.	Not applicable
	To study the possibility of slag and fly ash transportation back to the abandoned mines, to fill up the cavities through empty railway wagons while they return back to the mines and its implementation.	Not applicable
	Processing of the waste containing flux & ferrous wastes through waste recycling plant.	Not applicable
	To implement rainwater harvesting.	Rain water harvesting from administrative block-security barrack and store are used for gardening, toilets and cleaning.
	Reduction of Green House Gases by: a. Reduction in power consumption b. Use of gases for power generation c. Promotion of Energy Optimization Technology including energy audit	Blast furnace gas is used for power generation. In house energy audit is carried out and different energy conservation initiatives are taken to reduce electrical energy consumption and improve energy efficiency in compressors, fans, pumps, blowers, lighting systems etc. Thermal energy conservation in mini blast furnace (coke rate saving) and power house (fuel saving) are also achieved by process optimization and improvement. External energy audit shall also be planned.
	To set targets for Resource Conservation such as Raw material, energy and water consumption to match International Standards.	On going
Up-gradation in the monitoring and analysis facilities for air and water pollutants. Also to impart elaborate training to the manpower so that realistic data is obtained in the environmental monitoring laboratories.	We are using the expertise of outside laboratories for monitoring air and water pollutant.	
To Improve overall housekeeping.	Details of housekeeping are given in next page.	
11	Sponge Iron Plants Inventorisation of sponge iron plants to install proper air pollution control equipment to control primary and secondary emissions.	Not applicable

Annexure 3

Health Related Activities under Community Development Programme 2015-16 (Apr 15 to Sept 15)

Sl No	Date	Activity	venue	No of cases	Remarks
1	25.04.2015	Motivation Camp for parents of students (Rainbow)	Loreto Girls School, Sealdah, Kolkata	36 parents of students	.
2	09.05.2015	Motivation Camp for students (Rainbow)	Loreto Girls School, Sealdah, Kolkata	60 students	
3.	16.09.2015	Health Check-up Camp No. I for School Children of Maheshpur Primary School	Maheshpur Primary School	82 Students	<ul style="list-style-type: none"> ➤ Medicines were distributed accordingly. ➤ Leaflets were distributed among students.
4.	19.09.2015	Health Check-up Camp No. II for School students of Loreto Girls School.	Loreto Girls School, Sealdah, Kolkata	70 students	<ul style="list-style-type: none"> ➤ Medicines were distributed accordingly. ➤ Leaflets were distributed among students.
5.	25.09.2015	Gynecological Check-up Camp for villagers of our community	Amba Primary School	138 Villagers (Women)	<ul style="list-style-type: none"> ➤ Medicines were distributed accordingly.

DETAILS OF AWARENESS REGARDING HEAT RELATED ILLNESS AT TML & TMDIPL DEPTS

DATE	DEPARTMENTS
6th June'15	MBF # 2, TML
9th June'15	RAW MATERIAL, TML
15th June'15	MBF # 1, TML

Awareness Session On Hypertension (Dr. Anusua Samanta, Factory Medical Officer)

3rd July'15	Canteen Hall 3-30pm to 05-00pm
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Awareness Session On Occupational Health (Dr. Sunil Basu, Chest Physician)

27th Aug'15	TML Auditorium 11am to 12-30pm
27th Aug'15	Consultation & advice for emp having abnormality in PFT report
21.09.'15	Door to door campaign on alcoholism and drug addiction- Raipara
22.09.'15	Door to door campaign on alcoholism and drug addiction- Mudipara
22.09.'15	Session on Snake bite at departments of TMDIPL (Hot Zone Mech. Maint. (20) and Central Store (12)

Annexure 4

Traffic Density Survey

The traffic studies have been conducted to know the prevailing traffic volumes on the roads in the study area. It is essential to consider these details for assessing the anticipated future traffic volumes as a part of overall impacts assessment for the project.

The variations of traffic densities depend upon the working days and time and also vary in day and night times. In order to assess the prevailing traffic volumes on the roads, the survey was conducted during normal working days of the week by avoiding local holidays or abnormal situations to reflect the true picture of the traffic densities. The traffic study was conducted at two locations for 12 hours.

Selection of Sampling Location

The traffic density study was conducted at Saha Chowk NH-6 (Kolkata to Bombay) which is about 2 km away from the project site and Tata Metaliks Road to Saha Chowk which is about 1/2 km away from project site.

Methodology

Vehicular Count

The vehicles plying in both the directions were counted continuously for 12 hours at two locations. The vehicles were counted every hour and recorded under respective category. The maximum traffic count in an hour is termed as peak hour traffic. The vehicles were categorized under various heads like trucks/tankers, buses, multi axles, cars, 2/3 wheelers, cycles and bullock carts.

Categorization of Traffic

The engine driven vehicles were categorized into various heads viz. light motor vehicles (LMV) as two wheelers (scooters, motor cycles etc.), three wheelers (auto rickshaws, 3-wheel tempo etc.), medium motor vehicles (cars, jeeps), tractors (6 wheelers), minibuses and mini trucks (8 wheelers); heavy motor vehicles such as buses, trucks and tankers (10 wheelers).

Results and Discussion

The summary of daily traffic count for the location was monitored during the study period is summarized in **Table-1** and % of composition of the vehicles is given in the **Table-2**.

It was observed that the 2/3 wheelers, cars/jeeps and trucks/buses forms the major volume of the traffic. The total traffic PCU of this road is minimal.

Presentation of Results

The present level of traffic has been converted to Passenger Car Units (PCU) at this location as per the conversion factors stipulated by Indian Road Congress (IRC). The Passenger Car Unit (PCU) recorded at the selected traffic location, which is towards Saha Chowk NH-6 (Kolkata to Bombay) is about 9068 PCU, Saha Chowk NH-6 (Bombay to Kolkata) is about 8235 PCU, Tata Metaliks Road to Saha Chowk is about 1337 PCU and Saha Chowk to Tata Metaliks Road is about 1412 PCU.

TABLE-1
TRAFFIC DENSITY (VEHICLES/DAY)

Code	Location	Two Wheelers (Bicycle/ Scooter/ Motorcycle)	Four Wheelers (Car/Jeep)	Tractors/ Trucks	Buses	Multi Axles	Total PCU'S
1	Saha Chowk NH-6 (Kolkata to Bombay)	1471	1039	461	70	1900	9068
2	Saha Chowk NH-6 (Bombay to Kolkata)	1700	1148	506	86	1487	8235
3	Saha Chowk to Tata Metaliks Road	488	73	167	10	163	1337
3	Tata Metaliks Road to Saha Chowk	1100	58	157	15	96	1412

Note: PCU rating: (2/3 wheelers: 0.5, Car/Jeep: 1.0, Tractor: 3.0, Buses: 3.0, Trucks/HMV: 3.0)

TABLE-2
RECOMMENDATIONS ON TRAFFIC CAPACITY – IRC

Sr. No.	Category of Road	Maximum Carrying Capacity (PCU/day)
1	Two lane roads (7-m) with earthen shoulders	15,000
2	4-lane highway with earthen shoulders	35,000

The Kolkata to Bombay and Bombay to Kolkata National Highway-6 in front of the Saha Chowk is at present a two lane highway. It can take a maximum density of 15,000 PCU per day. The current density based on the primary survey is observed during two day that about ranged from 4941 moving towards Kolkata to Bombay, 4927 moving towards Bombay to Kolkata, 901 moving towards Saha Chowk to Tata Metaliks Road and 1426 moving towards Tata Metaliks Road to Saha Chowk.

Annexure 5

CSR Activity for community Development

EXPECTATIONS	PROPOSED INTERVENTIONS	LOCATION	EXPENDITURE APR - SEP '15	REMARKS
DRINKING WATER	To provide clean & hygienic drinking water in villages through deep bore well and piped water supply .	KUNJOCHAK	5.09	As part of our initiative of providing clean drinking water to surrounding villages, 02 nos of Drinking Water Projects commenced in Kunjochak and Raipara villages on 29 Jul '15 and 14 Aug '15 respectively. Deep boring jobs have been completed in both the villages and work of construction of pump room, laying pipeline and erection of water tanks etc is under progress and is expected to be completed by Nov'15.
		RAIPARA	5.67	
		MAHESHPUR & MODIPARA	1.51	Extension of pipeline of Maheshpur Project completed while Modipara extension work will be taken up after completion and stabilisation of drinking water project at Raipara village as this village will be covered by same borewell being provided in Raipara village.
LIVELIHOOD & ENTERPRENEURSHIP	Provide technical education for Matric pass students belonging to BPL category.	ITI Pratapchandra, Gopiballabhpur.	3.23	10 nos of matriculate boys out of which 06 nos are from AA Community have been sponsored for 02 Year ITI Course in Fitter / Electrician trade from Pratapchandra ITC, Gopiballabhpur which commenced from 13 Aug '15.
	Improve employability of local youth post ITI / Diploma / B.Sc. education by providing 01 year "On the Job" Training.	TML / TMDIPL	3.55	10 nos. of "Sadhbhavna Trainee" wherein ITI / Diploma / Science Graduates are being given one year "On the Job" training at TML commenced w.e.f. 02 Feb 2015. Out of the 10 trainees selected, 03 of them belong to AA community and for the first time 01 female Diploma qualified trainee has also been selected. Besides, 04 Sadhbhavna Trainees continued with their one year "on the job" training at TMDIPL which concluded on 21 Sep'15.
	Improve employability of mariculate girls	Chittaranjan Institue of Health, Medinipur.	0.6	10 nos of girls, out of which 04 are from AA community have been sponsored for a 02 Year Mid Wifery for the course from Chittaranjan Institute of Health, Medinipur which commenced from 07 Jul 2015.
HEALTH	Carry out health awareness / check-up camps in villages, blood donation camps, HIV / AIDS / sex education awareness camps.	MAHESHPUR & KUNJOCHAK	0.5	03 nos of General Health Check – up Camps with distribution of free medicines were organised during this period for the local community.
PROMOTING SPORTS	Providing LED TV for Gymnastic Training Centre at Kharagpur.	PALESTRA GYMNASITC TRG CENTRE, KGP	0.46	Provided a 42 inch LED TV to Palestra" Gymnastic Training Centre, Kharagpur to be used for viewing training films by trainees.
ASSISTING COMMUNITY AFTER NATURAL CALAMITY	Promote rural game amongst villagers.	ALL IDENTIFIED 6 VILLAGES	2.3	As part of our initiative of helping the community during a natural calamity, 200 nos of polythene sheets were distributed to affected families which enabled them to rebuild their damaged homes after cyclone KOMEN in Aug'15.