



TSL/MoEF&CC/BS-26/2021-03/133

29th Nov' 2021

The Dy. Director General

Ministry of Environment, Forests and Climate Change,

Regional Office (EZ),

A/3, Chandrasekharpur

Bhubaneswar-751023

Sub: Half yearly EC compliance reports of 256 MW Captive Power Plant of Tata Steel Limited (formerly Tata Steel BSL Ltd.) Meramandali, Dhenkanal for the period Apr to Sept'21.

Ref: EC vide letters no.J-13012/77/2011-IA-II (I), dated 12.02.2015 & its amendments dated 13.08.2021.

Dear Sir,

As per EIA notification 2006 and its subsequent amendments, we have mailed soft copies of the half yearly compliance status of the Environmental Clearances of 256 MW Captive Power Plant for the period from April to September'21 to the mail ID: roez.bsr-mef@nic.in on dated 29.11.2021 from the mail ID: santosh.pattajoshi@tatasteel.com.

In case of non-receipt of our half yearly status report through email, request you to inform us, so that we will be happy to submit hard copies in your good office by hand.

Thanking you,

Yours faithfully,

f:Tata Steel Limited

Saroj Kumar Banerjee

Chief Environment

Hard copies submitted by post to:

1. The Member Secretary, CPCB, Parivesh Bhawan, East Arjun Nagar, Delhi-110032.
2. The Member Secretary, SPCB, Parivesh Bhawan,A/118,Nilakahanta Nagar, Unit- VIII, Odisha, Bhubaneswar-751012.

TATA STEEL LIMITED

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HALF YEARLY COMPLIANCE REPORT

for the period
Apr to Sep'21

Environment Clearance of 256 MW Power Plant

Letter no.: J-13012/77/2011-I-A.II (T) dated 12th February 2015



TATA STEEL LIMITED

Narendrapur, Kusupanga, Meramandali, Dhenkanal, Odisha



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

Environment clearance of 256 MW power plant

Letter no.: J-13012/77/2011-I-A. II (T) dated 12th February 2015 & its amendment dated 13th Aug'21

SL.	STIPULATED CONDITIONS	COMPLIANCE STATUS
i	Vision document specifying prospective plan for the site shall be formulated and submitted to the RO of the Ministry within six months.	<ul style="list-style-type: none">• Vision, Mission and Environment Policy statements have been submitted to the Regional Office, MoEF&CC, BBSR along with the compliance report.
ii	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	<ul style="list-style-type: none">• Power is co-generated utilizing waste heat from DRI units through WHRBs.• Additionally, coke oven and blast furnace gases are also used for generating green power through gas fired boilers utilizing renewal energy source.• TERI has been engaged to carryout feasibility study for installation of solar power plant and the study has been completed.
iii	Sulphur and ash contents in the imported coal to be used in the project shall not exceed 0.3% and 6% respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environment clearance condition wherever necessary.	<ul style="list-style-type: none">• Not applicable• Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal and no ash generation.• Amendments in environment clearance has been made from MoEF& CC on 13th Aug'21 for switching of fuel from 50% Coal & 50% Mixed gas from steel plant to 100 % mixed gas from Steel Plant.
iv	A long term study of radioactivity and heavy metals contents in coal to be used shall be carried out through a reputed institute and results thereof analyzed every two years and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radioactivity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	<ul style="list-style-type: none">• Not applicable• Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal and no ash generation.• Hence, no need no monitor Radioactivity and heavy metals contents in coal and ash
v	A stack of 220 meter height shall be provided with continuous online	<ul style="list-style-type: none">• Online monitoring system has been installed for SOx and NOx in the 70-meter-high



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	monitoring equipments for SO _x , NO _x , PM ₁₀ and PM _{2.5} . Exit velocity of flue gases shall not be less than 22 m / sec. Mercury emissions from stack shall also be monitored on periodic basis.	common stack of 60TPH & 125TPH and 40-meter-high stack of 250 TPH gas fired boiler. Online data is transmitted to SPCB and CPCB servers through RT-DAS.
vi	High efficiency ESPs shall be installed to ensure that particulate emission does not exceed 50 mg / Nm ³ . Adequate dust extraction system such as cyclones/bag filters and water spraying system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal and no particulate emission. Hence, no need to install ESPs.
vii	Adequate dust extraction system such as cyclones / bag filters and water spraying system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities). Hence, no coal and ash handling and dust extraction system such as cyclones / bag filters and water spraying system not required.
viii	COC of at least 5.0 shall be adopted	<ul style="list-style-type: none"> • COC in the range of 7 -8 is maintained.
ix	Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitoring data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of the flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	<ul style="list-style-type: none"> • Monitoring of surface water and ground water is being carried out regularly. Monthly monitoring reports are being submitted to the SPCB, Odisha. Last monitoring report was submitted on 10th Oct,2021. • The summarized data is enclosed as annexure - I.
x	A well designed rainwater harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed records kept of the quantity of	<ul style="list-style-type: none"> • Lagoons and HDPE pond have been created to store rainwater. This water is reused in the process when required. However, recently detailed scientific study has been carried out for management of surface runoff & rainwater harvesting.



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	water harvested every year and its use.	<p>During the period April to Sept'21, 52407 m³ of rainwater has been utilized in process.</p> <ul style="list-style-type: none"> RWH potential has been studied by engaging an expert M/s. KRG Foundation, Chennai & the suggested projects are being implemented in phases. In the first phase 50000 Cum capacity storage pond has been constructed in the year 2021.
xi	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.	<ul style="list-style-type: none"> No water body or natural drainage system is disturbed.
xii	Hydrogeology of the area shall be reviewed annually from an institute / organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case any deterioration is observed, specific mitigation measures shall be undertaken and report / data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.	<ul style="list-style-type: none"> Hydrogeology study is being carried out by engagement of National Institute of Technology Rourkela. No deterioration of ground water level and quality have been observed from the last hydrogeology study.
xiii	Waste water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB / CPCB.	<ul style="list-style-type: none"> Wastewater generated from the plant is being treated in Effluent Treatment Plant Treated water is reused in slag granulation, greenery development and low end application in Blast Furnace & Sinter Plant etc. The water quality parameters are well within the limit as per the prescribed standard.
xiv	Additional soil for leveling of the proposed site shall be generated within the site (to the extent possible) so that natural drainage system of the area is protected and improved.	<ul style="list-style-type: none"> No additional soil is required for leveling the site.
xv	Prior approval of the Ministry shall be obtained for Mine Void and abandoned stone quarry filling of fly ash based on the outcome of the pilot study for which	<ul style="list-style-type: none"> Not applicable. Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	permission was accorded to the existing units by the Ministry on 05.09.2013 subject to Hon'ble NGT's Order.	operated which do not consume coal and no ash generation.
xvi	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry. Mercury and other heavy metals (As, Cr, Pb etc) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying areas.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal and no ash generation.
xvii	Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local panchayat.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal, no ash generation and no fugitive dust emission
xviii	Ash pond shall be lined up with HDPE/LDPE lining or any other suitable material impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60 TPH and 125 TPH & 250TPH capacities) are being operated which do not consume coal and no ash generation.
xix	Green belt consisting of three tire of plantation of native species around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 trees per ha with survival rate not less than 80%. Only native species shall be planted and the green belt development shall be expedited.	<ul style="list-style-type: none"> • Green belt development is under progress in and around the plant complex by planting indigenous species as per CPCB guidelines. Till March'21, 33.2% area (including inside and outside plantation) has been covered under green belt. Rapid afforestation using MiyaWaki method in consultation with IIT, Kharagpur has been initiated • Wherever feasible, green areas are being developed in and around the plant premises using mainly native plant species to ensure survival rate of about 90%. • Total 70975 nos. saplings have been



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

		planted during the period from April' 21 to Sept'21 both inside and outside the plant premises.
xx	CSR schemes identified based on Public Hearing issues and need based assessment shall be implemented in consultation with the village panchayat and the District administration starting from the development of the project itself. As part of CSR, prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating program.	<ul style="list-style-type: none"> • The peripheral development is being carried out based on socio economic survey and need based assessment. Based on this, TSBSL has provided the facilities of sanitation, drinking water, education, health care, road and communication facilities etc in surrounding villages. • Various socio-economic development programs covering education, safe drinking water, sports and health care etc are undertaken in nearby villages. • Details breakup of CSR initiatives are enclosed as Annexure-II
xxi	As committed, a minimum amount of Rs. 40.00 crore shall be earmarked for CSR activities for next five years. For proper and periodic monitoring of CSR activities, a CSR committee or a social audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final	<ul style="list-style-type: none"> • CSR department has been established to monitor the CSR activities. The CSR activities are based on need based assessment.
xxii	For proper and periodic monitoring of CSR activities, a CSR committee or a social audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	<ul style="list-style-type: none"> • Evaluation of the Impact of Corporate Social Responsibility Projects has been carried out by XIMB, Bhubaneswar.
xxiii	An Environmental Cell comprising of at least one expert in environment science/engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed	<ul style="list-style-type: none"> • Environment Management Department has been established for implementation of stipulated environmental safeguards and control of pollution. • The head of the Environment department and other officers are having Environmental



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement / mitigation measures.	Science/Engineering qualification and adequate experience.
A	General Conditions:	
i	Space for FGD shall be provided for future installation as may be required.	<ul style="list-style-type: none"> • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated. Hence, FGD is not required.
ii	The treated effluents conforming to the prescribed standards only shall be re-circulated and re-used within the plant. Arrangements shall be made that effluents and storm water do not get mixed	<ul style="list-style-type: none"> • Waste water is treated in ETP • The treated effluent, conforming to the prescribed standards, are recycled and reused for slag granulation, dust suppression and green area development.
iii	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt / plantation.	STP of 100 m ³ per day has been installed near Blast Furnace-I.
iv	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fire in coal yard especially during summer season. Copy of these measures with full details along with location on plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal. •
v	Storage facility for auxiliary liquid fuel such as LDO/HFO/LSHS shall be made in the plant area in consultation with the Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	<ul style="list-style-type: none"> • Not applicable. LDO/HFO/LSHS is not using for startup activities
vi	First aid and sanitation arrangements shall be made for the drivers and other	<ul style="list-style-type: none"> • Adequate First aid and sanitation



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	contract workers during construction phase.	arrangements were made during construction phase of the plant and similar facilities are being maintained during operational phase also for the workers and employees.
vii	Noise level emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from the source. For people working in the high noised areas, requisite PPEs like ear plugs/ear muffs etc shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric records and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	<ul style="list-style-type: none"> • Silencers have been provided at boilers to control noise during steam venting. • Necessary PPEs are being provided to all the workers working in noisy areas and periodic examination is being conducted for the workers engaged in noisy areas. • Noise monitoring is carried out regularly in the work zone areas and reports are enclosed as annexure-III.
viii	Regular monitoring of ambient air ground level concentration of SO ₂ , NO _x , PM _{2.5} , PM ₁₀ and Hg shall be carried out in the impact zone and records maintained. If at any stage levels are found to exceed the prescribe limits, necessary control measures shall be provided immediately. The locations of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the regional office of the Ministry. The data shall also be put on the website of the Company.	<ul style="list-style-type: none"> • Five ambient air quality monitoring stations have been set up in nearby villages for measuring ground level concentrations of PM₁₀, SO₂ and NO_x in consultation with SPCB, Odisha.
ix	Utilization of 100 % fly ash generated shall be made from 4 th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	<ul style="list-style-type: none"> • Not applicable • Presently only gas fired boilers (60TPH, 125TPH & 250TPH capacities) are being operated which do not consume coal and no ahs generation.
x	Provision shall be made for the housing of contractor workers (as applicable) within the site with all necessary	<ul style="list-style-type: none"> • Adequate arrangements of housing for construction workers were made during construction phase of the plant and same



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	infrastructure facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc.	facilities are being maintained during operational phase also for employees and workers.
xi	The project proponent shall advertise in at least two local news papers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environment clearance and copies of the clearance letters are available with the SPCB/Committee and may also be seen at website of the Ministry of Environment and Forests at http://envfor.nic.in	<ul style="list-style-type: none">• Advertisements were circulated in The Telegraph (English daily) dated 15.02.2015 and the Samaya (Oriya daily) dated 15.02.2015.• A copy of the same was submitted to MoEF&CC vide our letter no. BSL/MoEF/BS-02/2015-09 dated 21.02.2015.
xii	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the Company by the Proponent.	<ul style="list-style-type: none">• Copy of the environment clearance was submitted to the concerned panchayat, Zila Parishad, District Industry Centre etc.
xiii	The proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of measured data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF, the respective zonal office of CPCB and the SPCB. The criteria pollutant levels namely SPM, RSPM (PM ₁₀ and PM _{2.5}) SO ₂ , NO _x (ambient as well as stack emission) shall be displayed at a convenient location near the main gate of the Company in the	Status of compliance of the stipulated environment clearance conditions are being uploaded on website and are being sent to the Ministry, CPCB and SPCB. Results of online air quality monitoring are displayed electronically near the main gate. The last half yearly compliance report was submitted vide letter no. TSBSL/MoEF&CC/BS-01/2020-02/59 dated 01.06.2021.



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	public domain.	
xiv	<p>The environment statement for each financial year ending 31st March in Firm-V as is mandated to be submitted by the project proponent to the concerned SPCB as prescribed under the Environment (Protection) Rules 1986, as amended subsequently, shall also be put on the website of the Company along with the status of compliance of environment clearance conditions and shall also be sent to the respective Regional Office of the Ministry by e-mail.</p>	<ul style="list-style-type: none">• The environment statement in Firm-V for each financial year ending 31st March is submitted to the Regional Office of the Ministry, CPCB and SPCB.• Last environment statement was submitted vide letter no. TSBSL/SPCB/BS-03/2021-15/97, dated. 29.09.2021.
xv	<p>The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of environment and Forests, its Regional Office, CPCB and SPCB. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional office of MoEF.</p>	<ul style="list-style-type: none">• Six monthly reports on status of the implementation of the stipulated environmental safeguards are being submitted.
xvi	<p>Regional office of the MoEF will monitor the implementation of the stipulated conditions. A complete set of documents including Environment Impact Assessment report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will upload the compliance status in their website and update the same from time to time at least six monthly basis. Criteria pollutants levels including NOx (from stack and ambient</p>	<ul style="list-style-type: none">• All the required documents have been already submitted to the Regional Office and will be made available during inspection.• Compliance status is uploaded on the website and updated in every six months.



HALF YEARLY COMPLIANCE REPORT

April'21 to Sept'21

	air) shall be displayed at the main gate of the power plant.	
xvii	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	<ul style="list-style-type: none">• Adequate funds are being provided by the management for pollution control and to meet recurring costs. Environmental requirements are given top priority for fund allocation and approval of capital projects.• The funds earmarked for environment pollution control measures are not diverted for any other purpose.• The company has invested adequate capital expenditure to improve mix of clean power & also reduction of carbon emissions
xviii	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the project authorities and the dates of land development work and commissioning of plant.	<ul style="list-style-type: none">• Financial closure and financial approval will be communicated to the regional office and the Ministry of MoEF&CC.
xix	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office / CPCB / SPCB who would be monitoring the compliance on environmental status.	<ul style="list-style-type: none">• Full cooperation is extended to the Scientists/Officers from the Ministry / Regional Office / CPCB / SPCB who would be monitoring the compliance on environmental status.

Summary of ground water level monitoring report inside plant premises

Period: From Apr to Sep'21

S.N	Location with description	Depth of Bore Well	Longitude	Latitude	Monitoring Point (mtr.agl)	Water level in mtr bgl	
						June-21	Sept-21
1	Near CRM	163ft	20°47.956'	85°15.076'	1.58	3.93	2.11
2	Colony near STP	165ft	20°49.045'	85°15.734'	1.19	2.11	1.68
3	RMHS Near Wagon Tippler	300ft	20°47.752'	85°15.993'	1.2	4.8	3.12
4	Near Blast Furnace-2	162ft	20°47.25'	85°15.613'	1.0	2.68	1.50
5	Near Gate no-10	166ft	20°48.653'	85°15.754'	0.9	3.58	2.16
6	Near Railway bridge	156ft	20°48.920'	85°15.858'	1.46	5.12	2.88

Ground Water Quality Analysis

S. N	Parameter	Unit	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	Standard as per IS-10500-2012 (Acceptable Limit)	Standard as per IS-10500-2012 (Permissible Limit)
1	p H	-	7.50	8.06	8.21	7.92	7.56	7.66	6.5-8.5	6.5-8.5
2	Colour	Hazen	Colour less	Colour less	Colour less	Colour less	Colour less	Colour less	5	15
3	Odour	-	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Agreeable
4	T. Hardness (as CaCO ₃)	mg/l	244	416	464	310	390	378	200	600
5	Calcium as Ca	mg/l	59.32	100.2	112.22	74.55	93.78	91.38	75	200
6	Magnesium as Mg	mg/l	23.42	40.5	44.40	30.26	38.06	36.6	30	100
7	Iron as Fe	mg/l	0.09	0.12	0.07	0.10	0.07	0.08	0.3	0.3
8	Chlorides as Cl	mg/l	68.16	254.18	259.86	183.18	242.82	239.98	250	1000
09	Fluoride as F ⁻	mg/l	0.75	0.82	0.69	0.70	0.82	0.64	1.0	1.5
10	Dissolved solids	mg/l	337	518	591	432	488	568	500	2000
11	Nitrate as NO ₃ ⁻	mg/l	1.8	2.2	2.8	2.0	2.3	2.5	45	45
12	Chromium as Cr ⁺⁶	mg/l	0.009	0.012	0.010	0.014	0.008	0.018	0.05	0.05
13	Alkalinity as CaCO ₃	mg/l	44	58	60	50	46	52	200	600
14	Phosphate as PO ₄	mg/l	0.62	0.78	0.88	0.70	0.72	0.82	\$	\$
15	Mineral Oil	mg/l	ND	ND	ND	ND	ND	ND	0.5	0.5

N.B-GW-1-Near colony ST,GW-2-Near CRM,GW-3-Near Wagon Tippler area, GW-4- Near BF-2 GW-5- Near Gate Number-10,GW-6- Near Railway Bridge at material road

Ground Water Level

Period: Apr to Sep'21

S.N	Location	Sample Code	Monitoring Point (mtr.agl)	Longitude	Latitude	Water Level in mtr bgl	Water Level in mtr bgl
						June-21	Aug-21
1	Kharagprasad	GW-01	0.5	20 ⁰ 49.299'	85 ⁰ 18.923'	3.2	3.34
2	Charadagadia	GW-02	1	20 ⁰ 47.768'	85 ⁰ 17.083'	5.55	7.66
3	Sibpur	GW-03	0	20 ⁰ 46.941'	85 ⁰ 14.394'	5.9	7.29
4	Kochilamara	GW-04	0.21	20 ⁰ 47.541'	85 ⁰ 16.802'	4.8	5.25
5	Galpada	GW-05	0.39	20 ⁰ 48.142'	85 ⁰ 18.600'	6.1	4.76
6	Motonga	GW-06	0.64	20 ⁰ 48.143'	85 ⁰ 18.599'	3.1	3.95
7	Asanabania	GW-07	0.7	20 ⁰ 47.534'	85 ⁰ 16.802'	6.4	6.71
8	Narendrapur	GW-08	0.25	20 ⁰ 49.483'	85 ⁰ 15.530'	4.88	4.06
9	Khaliberena	GW-09	0.18	20 ⁰ 46.946'	85 ⁰ 14.396'	5.1	5.7
10	Ganthigadia	GW-10	0.52	20 ⁰ 48.501'	85 ⁰ 15.118'	3.8	4

Ground Water Quality Analysis Report of surrounding villages

June-2021

S. N	Parameter	GW-01	GW-02	GW-03	GW-04	GW-05	GW-06	GW-07	GW-08	GW-09	GW-10	Drinking water desirable limits IS-10500-2012(permissible limit)
1	pH	7.2	7.3	7.2	7.0	7.5	7.5	7.2	7.3	7.2	7.1	6.5-8.5
2	Conductivity $\mu\text{s/cm}$	1012	996	920	752	1080	720	1060	788	695	888	-
3	TDS mg/l	608	598	552	451	648	432	636	473	417	534	2000
4	Total Hardness as CaCO ₃ mg/l	388	390	352	330	410	322	420	312	302	355	600
5	Calcium Hardness as CaCO ₃ mg/l	234	234	212	198	246	193	252	188	182	212	-
6	Magnesium Hardness as CaCO ₃ mg/l	154	156	140	132	164	129	168	124	120	143	-
7	Total. Alkalinity	172	192	188	166	210	148	222	156	149	162	600
8	P. Alkalinity as CaCO ₃ mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
9	Chloride mg/l	193.12	151.94	180.34	164.72	189.57	151.94	180.34	165.43	146.26	161.88	1000
10	Fluoride mg/l	0.72	0.72	0.82	0.66	0.66	0.58	0.54	0.78	0.82	0.72	1.5
11	Total Phosphate as P mg/l	0.55	0.56	0.32	0.62	0.52	0.29	0.66	0.44	0.44	0.56	-
12	Nitrate NO ₃ -2 mg/l	1.88	0.92	1.52	2.52	1.52	1.10	1.20	1.10	1.42	0.92	45
13	Iron as Fe mg/l	0.12	0.08	0.08	0.10	0.11	0.06	0.14	0.10	0.10	0.09	0.3

September,21

S. N	Parameter	GW-01	GW-02	GW-03	GW-04	GW-05	GW-06	GW-07	GW-08	GW-09	GW-10	Drinking water desirable limits IS-10500-2012(permissible limit)
1	pH	7.2	7.0	7.1	7.3	7.2	7.5	7.2	7.0	7.1	7.3	6.5-8.5
2	Conductivity $\mu\text{s/cm}$	888	1568	452	902	352	860	1221	688	588	1012	-
3	TDS mg/l	497	878	271	505	197	482	685	386	330	560	2000
4	Total Hardness as CaCO ₃ mg/l	368	620	252	452	288	292	278	232	188	392	600
5	Calcium Hardness as CaCO ₃ mg/l	222	372	152	272	174	175	168	140	114	235	-
6	Magnesium Hardness as CaCO ₃ mg/l	146	248	100	150	114	117	110	92	74	157	-
7	Total. Alkalinity	88	96	82	102	66	106	136	112	65	156	600
8	P. Alkalinity as CaCO ₃ mg/l	0	0	0	0	0	0	0	0	0	0	-
9	Chloride mg/l	65.32	115.02	41.18	63.19	39.05	90.88	72.42	61.06	48.28	79.52	1000
10	Fluoride mg/l	0.48	0.68	0.72	0.92	0.55	0.86	0.81	0.72	0.36	1.05	1.5
11	Total Phosphate as P mg/l	0.92	0.82	0.52	0.48	0.46	0.78	0.42	0.58	0.29	0.64	-
12	Nitrate NO ₃ -2 mg/l	2.8	1.6	1.1	1.5	1.2	0.92	1.28	1.56	0.88	0.78	45
13	Iron as Fe mg/l	0.12	0.07	0.13	0.08	0.07	0.12	0.10	0.11	0.09	0.13	0.3

CSR Expenditure and Activity highlights

S. No.	Theme	CSR expenditure in Lakhs (Apr to Sep'21)	Activity Highlights
1	Livelihood	97.64	<ul style="list-style-type: none"> • WEE Project : Socio-economic empowerment of women thro SHG enterprises (Training, Supporting & Linking for income generation activities both farm & non-farm) • Livelihood promotion thro Agriculture (Commercial Vegetable cultivation) and Allied (Fishery) Poultry, activities. • Construction/renovation of water bodies for livelihood resource creation.
2	Health & drinking Water	40.84	<ul style="list-style-type: none"> • Mobile Medical Unit • Drive to prevent vector born (Malaria/Dengue) diseases • Maternal health training, institution building and nutrition garden • Adolescents health programs: PRAYAS • Drinking water
3	Women Empowerment	-	
4	Sports, Culture & Community engagement	6.67	<ul style="list-style-type: none"> • Sports tournament & coaching, • Gymnasium development for youth club • Promotion of traditional culture
5	Education	37.34	<ul style="list-style-type: none"> • Education infrastructure, • Project QUEST through Aspire is the implementation partner.
6	Infrastructure	410.41	<ul style="list-style-type: none"> • Construction & repair of road • Solar Street light • Other community infrastructure & amenities
7	Disaster/Emergency response	753.86	<ul style="list-style-type: none"> • COVID Hospital, Relief work related to COVID • Natural disaster and other relief
	TOTAL	1346.76	

Note: Environment: plantation done in villages and school, saplings being provided by TSL Meramandali, Horticulture dept. So no expenditure

SUMMARY OF WORK ZONE NOISE MONITORING

TATA STEEL LIMITED, MERAMANDALI

PERIOD: From Apr to Sept'21

S.N	Name of the unit	Location	Noise level in d B(A) at 3mtr	Standard as per Factory Act 1950
			Range	
1	Gas fired Boiler 60 TPH	Near ID fan -1 area	83.1-84.2	85.0
		Near ID fan -2 area	83.3-84.5	
		Near FD fan -1 area	83.6-85.1	
		Near FD fan -2 area	84.2-85.1	
		Near Boiler area	83.2-84.4	
2	Gas fired Boiler 125 TPH	Near ID fan -1 area	84.9-87.9	
		Near ID fan -2 area	85.1-87.9	
		Near FD fan -1 area	85.4-89.2	
		Near FD fan -2 area	85.4-88.7	
		Near Boiler area	84.2-87.4	
3	Gas fired Boiler 250 TPH	Near ID fan -1/2 area	85.1-86.9	
		Near FD fan -1/2 area	84.5-87.0	
		Near Boiler area	85.2-87.5	