



To
The Additional Principal Chief Conservator of Forest
Eastern Central Zone
Ministry of Environment, Forests & Climate Change, Govt. of India
Bungalow no. A-2, Shyamali Colony
Ranchi-834002, Jharkhand
Email: ro.ranchi-mef@gov.in

WBD/EMC/4071/117/17
Date: 28.11.2017

Ref: Environmental Clearance letter no. J-11015/108/2016-IA.II(M) dated: 17.05.2007

Sub: **Half-yearly compliance status report of Environmental Clearance conditions for the period April'17 - September'17 in respect of West Bokaro Open Cast Mine of Tata Steel Limited**

Dear Sir,

We are herewith submitting the six monthly compliance status report in respect of the stipulated Environmental Clearance conditions of West Bokaro Open Cast Mine for the period from **April'17 - September'17** as per EIA Notification, 2006. We are also sending you the soft copy of the report to your good office on email: ro.ranchi-mef@gov.in for your ready reference.

We trust that the measures taken towards environmental safeguards comply with the stipulated environmental conditions. We look forward to your further guidance which shall certainly help us in our endeavor for further improve upon our Environmental Management practices.

Thanking you,
Yours faithfully,

**Head (Environment & Forest)
West Bokaro Division
TATA Steel Limited**

Encl : Annexure-I: Environmental Monitoring Reports, Annexure-II: NABL Accredited Lab Reports

Copy to : The Chairman, Central Pollution Control Board, Southernd Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107 (W. B.)
: The Member Secretary, State Pollution Control Board, T.A. Division (Ground Floor), H.E.C. Dhurva, Ranchi - 834004 (Jharkhand)
: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

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COMPLIANCE REPORT PERIOD: APRIL'2017 - SEPTEMBER'2017

**ENVIRONMENTAL CLEARANCE TO
WEST BOKARO OPEN CAST COAL MINE OF TATA STEEL LIMITED
VIDE MoEF&CC's LETTER NO. J-11015/108/2006-IA.II(M), DATED: 17.05.2007
FOR PRODUCTION OF 7 MTPA COAL**

A. Specific Conditions

- (i) **No mining operations shall be undertaken in the forestland until clearance has been obtained under the provisions of FC Act, 1980.**

Compliance:

Being complied with.

- (ii) **The embankment along the River Bokaro shall be designed taking into account the highest flood level, based on past data, along the quarry area at the mine boundary along the River Bokaro so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML and shall be stabilized by plantation. The height of the embankment shall be at least 5 m higher than the HFL.**

Compliance:

The height of the embankment along the Bokaro River is more than 5 m higher than the HFL. The HFL observed was 336 mts while the lower most level of quarry boundary is 346 mts. At the same time 30 mts solid surface has also been left from river to avoid any ingress of water in the mine pit. The slope of embankment is being maintained in the ratio of 2:1 along with plantation for stabilization.

- (iii) **Topsoil should be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of green belt.**

Compliance:

Top soil, removed during excavation of coal, is being stacked separately in available mining area, which is being used for spreading on overburden dump surface for plantation and greenbelt development. Currently no top soil is being generated since mine is progressed in broken up area.

- (iv) **No new external OB dumps shall be created for storing OB. Monitoring and management of existing reclaimed dumpsites should continue until the vegetation becomes self sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on and yearly basis.**

Compliance:

No further new external OB dumps will be created for storing of OB. Since the mined out area in the operating mines are available which is being used for inpit dumping. The existing reclaimed dump site is being monitored & maintained to sustain vegetation. All the external OB dumps have stabilized over the years and more over, retaining wall has also been provided for further stability. Abandoned dump area has been identified and taken up for reclamation. As per modified mine plan, all existing dump are temporary and will be re-handled as mine advances.



Plantation in OB dump

- (v) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly de silted and maintained properly.

Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also be provided adequate retention period to allow proper settling of silt material.

Compliance:

To arrest the silt and sediment flow from soil, catch drains silt ponds were constructed in the dump area. The water collected in siltation pond is reused in gardening and dust suppression in mines area. Construction of garland drain is a regular practice to take care of run-off water in the mining operation. The details of garland drain are top width varies in between 6m to 10m & bottom width is kept at 3m. Depth varies from 2m to 7m. The sump capacity is in order of 48-120 million gallons considering maximum rainfall depending upon the catchment area. Accumulated mine pit water being used in industrial and domestic purpose after necessary treatment. One of the de coaled area of Query - E site is being used as rain water, catchment water storage area.



Abandoned mine pit as RWH pond



Garland Drain

- (vi) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.

Compliance:

Complied with. All the dumps are covered with toe wall and garland drains. All the drains are regularly being maintained for silt removal.



Toe wall & garland drain in the area

- (vii) Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.

Compliance:

Crusher houses and CHP areas are equipped with dry fog dust suppression system, fixed type dust suppression system are installed at all conveyor networks, haulage roads & various mineral transfer points. Conventional coal stock yards are replaced with concrete silos for dust controls. Mobile & fixed water sprinklers (pressurized water tankers) are used in mine haul roads.



Use of Fixed & mobile water sprinklers in area

(viii) Drills should be wet operated.

Compliance:

All the drills are wet operated and interlocked with drill operations.

(ix) Controlled blasting should be practiced only during day time with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.

Compliance:

Blasting in mines area is regularly being practiced in day time only. Controlled blasting is practiced in the close proximity of structure, continuous monitoring along with data collection is being practiced. Delay detonators are used to minimize vibration, dust & formation of fly rocks. However, at regular intervals scientific study is also been conducted from reputed & recognized organizations.

(x) Area brought under afforestation shall not be less than 1260 ha which includes reclaimed external OB dump (85 ha), backfilled area (974 ha), along ML boundary, along roads, green belt (201 ha), in undisturbed areas and in colony within the mine lease area by planting native species in consultation with the local DFO/ Agriculture Department. The density of the trees should be around 2500 plants per ha.

Compliance:

Progressive afforestation is practiced as per plan in the area. Last year about 1 lakh saplings have been planted to cover an additional area of approximately 27 ha. This year a thrust has been given for green belt development along the safety zone in the area, local and native species was planted, including OB dumps, lease boundary, residential colonies, and coal dispatch area. Voluntary afforestation in & around villages is also being done with local communities.

TATA Steel is committed to conserve, enhance & restore the biodiversity in its areas of operations and made a biodiversity policy to achieve no net loss of biodiversity over a period of time. In this regard, International Union for Conservation of Nature (IUCN) agency was engaged for assessing the biodiversity in the area and developing an integrated biodiversity management plan for all its mining clusters. Various initiatives are taken to conserve and restore the bio-diversity in the area in consultation with IUCN & forest officials. This year a niche nesting project, an artificial nest of wooden boxes are being placed in & around areas for birds to enhance the population in the area is done along with water feeders.



Plantation activities



Biodiversity study & initiatives

- (xi) A Progressive Closure Plan shall be implemented by reclamation of quarry area of 974 ha which shall be backfilled and afforested by planting native plant species in consultation with the local DFO/ Agriculture Department. The density of the trees should be around 2500 plants per ha. The balance 20 ha of de-coaled area being converted into a water reservoir shall gently slope along the upper benches and stabilized and reclaimed with plantation.

Compliance:

Mine plan & mine closure plan was approved by Ministry of Coal, which includes all plantation details. Afforestation & reclamation of de-coaled area will be done by planting native species in consultation with DFO / Agriculture departments as per prevailing guidelines. As per revised mine plan, all dumps will be re-handled as the mine progress, however to stabilize the dumps, this year reclamation by lemon grass & mulberry plantation is done with additional area.

Lemon grass plantation in Overburden dump

One of the out pit dump area is taken up for lemon grass plantation for stabilization.



Lemon grass in the dump

Mulberry plantation in OB dump

In one of the OB dump area, mulberry plantation is done for development of greenery & stabilization of dumps.



Plantation of mulberry in dump for stabilization & reclamation

- (xii) A Conservation Plan for endangered species found in and around the project area shall be formulated and for the medicinal plants (in-situ and ex-situ) shall be prepared and implemented in consultation with the State Forest and Wildlife Departments. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MoEF Regional Office, Bhubaneswar.

Compliance:

The project area doesn't have any endangered species found in and around area. However, some of the plants of having medicinal values are conserved by developing an area. Separate fund has been earmarked for implementation of conservation plan along with State Forest and Wildlife Department (if any). Some of the species of medicinal importance are as:



Datura (*Datura stramonium*)



Sarpagandha (*Rauwolfia serpentina*)



Tulsi (*Ocimum sanctum*)



Periwinkle (*Catharanthus roseus*)



Ghrith Kumari (*Aloe vera*)



Coleus aromaticus (*Plectranthus amboinicus*)



Ginger (*Zingiber officinalis*)



Adosa (*Adhatoda vasica*)



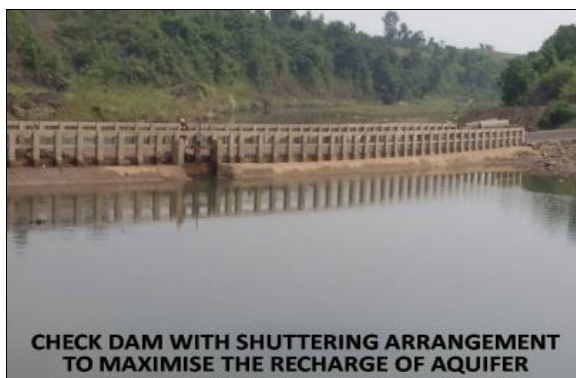
Kadi patta (*Murraya koenigii*)

To conserve, restore and enhance the medicinal plants in the area, a separate medicinal garden also being prepared at one of the OB dump. Besides above several medicinal plants such as Bael (*Aegle marmelos*), Neem (*Azadirachta indica*), Avla (*Phyllanthus emblica*), Karanj (*Millettia pinnata*), Ber (*Ziziphus mauritiana*), Sarifa (*Annona squamosa*) were also planted in the area.

- (xiii) **No groundwater shall be used for the mining/project activities. Additional water required, if any, shall be met by recycling/reuse of the water from the existing activities and from rainwater harvesting measures.**

Compliance:

It is being complied and regularly practiced; no ground water is used for mining & other project activities. All the plants are operated at Zero Liquid Discharge (ZLD) and entire processed water is recycled and reused. An abandoned mine pit is converted into rain water harvesting (RWH) pond. Check dams, rain water harvesting structures are also being constructed in surrounding villages. A separate RWH cum drinking water project is constructed in the area and about 7500 villagers were benefited through pipeline drinking water at doorstep in village.



RWH cum drinking water project at Duni village



Rainwater harvesting structures

- (xiv) **Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.**

Compliance:

Regular monitoring of ground water level of existing well is being carried out. The data collected for the month of May 2017 and August 2017 are as follows:

Sl. No.	LOCATION	MONTH	
		May 2017	August 2017
01.	RAJIV NAGAR	3'8"	3'4"
02.	JAIRAM HOTEL	5'5"	7'7"
03.	SHOPING COMPLEX	6'11"	6'3"
04.	JAGARNATH GOPE	8'10"	4'0"
05.	HOUSING	15'9"	3'7"
06.	MUKUND BERA	17'11"	3'4"
07.	DRIVER HUT	8'5"	4'9"
08.	2 NO WELL	5'3"	2'3"
09.	9 NO WELL	6'0"	2'7"
10.	PUNDI	32'6"	5'7"
11.	DUNI	18'10"	5'7"
12.	BANJI	DRY	9'2"
13.	KEDLA ROAD	15'0"	10'0"
14.	JHARMA BASTI	7'2"	4'7"
15.	BIRHOR VILLAGE (New location)	32'6"	3'4"
16.	BELGADA VILLAGE (New location)	7'6"	1'10"
17.	CHAINPUR WELL NO.1	30'10"	9'7"
18.	CHAINPUR WELL NO.2	24'2"	6'0"

- (xv) **The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.**

Compliance:

The ground water recharge measures are continuously being taken up. In this year thrust has already been put up to streamline drinking water projects, which includes construction of ponds, bore well, check dams etc. in and around our leasehold areas. The projects also include construction of rain water harvesting structures, installation of water filtration plant, in surrounding villages.



Artificial ground water recharge pit (Bore well) in Birlor village



Drinking Water system at Atna village

- (xvi) **ETP should also be provided for workshop, coal washery and CHP. There shall be zero discharge of wastewater from CHP and the coal washeries. Effluents from the tailings pond shall be treated to conform to prescribed standards in case of discharge into any water course outside the lease.**

Compliance:

Zero liquid discharge (ZLD) is being maintained at Coal Washery, CHP, workshops & power plant; the effluent generated is completely recycled & reused. In addition to above, mechanical tailing dewatering system is installed for Washery & CHP area. Oil traps are also installed for workshops. The water from tailing pond after proper de-silting of tailings is recycled back to washeries to maintain zero discharge. Also the quality of water is being analyzed regularly (monthly). The tailing slurry is handled through high frequency screen and belt press to produce dry tailings and recover water for recycling. To address the undulated topography and to recover & recycle water a detailed study is under progress from external agency.



Mechanical tailings de-watering system



Coal transport by conveyor belt



Effluent recycling in washery

- (xvii) **An STP shall be provided for the township/colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.**

Compliance:

Sewage Treatment Plant (STP) of 0.24MLD is already installed in one of the residential block, treated water reused in dust suppression of road. For other areas a detailed feasibility study has been done by ISM Dhanbad. An STP of 300 KLD is being installed in colony area.

- (xviii) **R&R shall be based on norms laid down by the State Government and shall not be inferior than that in the National R&R Policy and shall be completed within a specified time - frame.**

Compliance:

The R&R policy designed for the project affected families is adequate & having additional benefits. As a part of R&R policy some of the measures taken are as follows:



R & R facility provided in the area

- (xix) **For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF and its Regional office at Bhubaneswar.**

Compliance:

Land use maps are under preparation for core and buffer zone for this year after completion of study report will be submitted to ministry office. Work order for job done has already been done and will be completed at the earliest.

- (xx) **A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval.**

Compliance:

It will be complied five years in advance of final mine closure plan for approval. An adequate fund has been provided separately for final mine closure activity.

- (xxi) **Consent to operate shall be obtained before expanding mining operations.**

Compliance:

Consent to operate is being obtained regularly.

B. General Conditions

- (i) **No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.**

Compliance:

No change in mining technology is done.

- (ii) **No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.**

Compliance:

Complied with

- (iii) **Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO₂ and NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the SPCB.**

Compliance:

Consulted with Regional Officer of Pollution Control Board, by considering the predominate wind direction, base line study and Air modeling one station in buffer zone, and 04 station in core zone has been suggested.

- (iv) **Fugitive dust emissions (SPM and RPM) from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.**

Compliance:

All the strategic locations of operating plants where the possibilities of fugitive dust emissions, has been provided with adequate enclosures, side skirt, chute, seal plate, sealing of transfer points along with adequate dust suppression system. All the sites are monitored regularly (once in a month) and data is kept for record. The haul road, loading and unloading points are provided with pressurized water tanker for water spraying along with chemical dosing, wagon loading does not require any water spraying since the coal is in moist condition.



Fixed and mobile water suppression system

- (v) **Data on ambient air quality (SPM, RPM, SO₂ and NO_x) should be regularly submitted to the Ministry including its Regional Office at Bhubneshwar and to the State Pollution Control Board and to the Central Pollution Control Board once in six months.**

Compliance:

Being complied with, All monitoring details are attached as **Annexure-I**.

Continuous online ambient air quality monitoring system (CAAQMS) is installed at division and being operational. All the parameters such as PM₁₀, PM_{2.5}, NO, NO₂, NO_x, CO, SO₂, Wind Speed (in m/s), and Wind Direction (in degree)

are recorded on every 15 minutes interval, all parameters were measured by analyzers equipped in mobile van. A displayed unit is also, installed at main entrance of division. All the instruments including mobile van is supplied by CPCB authorized agency & approved from USEPA. The data connectivity with CPCB server & transmission facility is being installed.



Continuous Ambient Air Quality machine (CAAQMS) for data monitoring system

Environmental monitoring data is attached as an **Annexure-I** & external monitoring report from NABL accredited laboratory is attached as **Annexure-II**.

Online emission monitoring for FBC based 2x10MW captive power plant is installed at for PM, SO₂ & NO_x monitoring in stack and continuously being transmitted to JSPCB server. Electro Static Precipitator (ESP) is attached with the power plant and is regularly being maintained. The quality & quantity of emission is maintained well within limit as per standard. The approval for data connectivity permission to CPCB is recently granted to vendor. All the data of PM, SO_x & NO_x are working smoothly.



Continuous Emission Monitoring for Power House for PM, Sox & NOx data

- (vi) **Adequate measures should be taken for control of noise levels below 85 db(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc should be provided with ear plugs/ muffs.**

Compliance:

Control measures are being taken up to keep noise level well within limit in working environment by providing adequate enclosure/ separation to the various high noise sources, proper maintenance, provision of control room, operator's a/c cabin etc. In addition all the persons are provided with PPEs such as ear plug/ muff during work. Warning signs in local language are also displayed at various areas in mines & plant. An adequate green belt is also maintained in the area.



Noise control measures in the area

- (vii) **Industrial wastewater (workshop and wastewater from the mine) should 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 from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.**

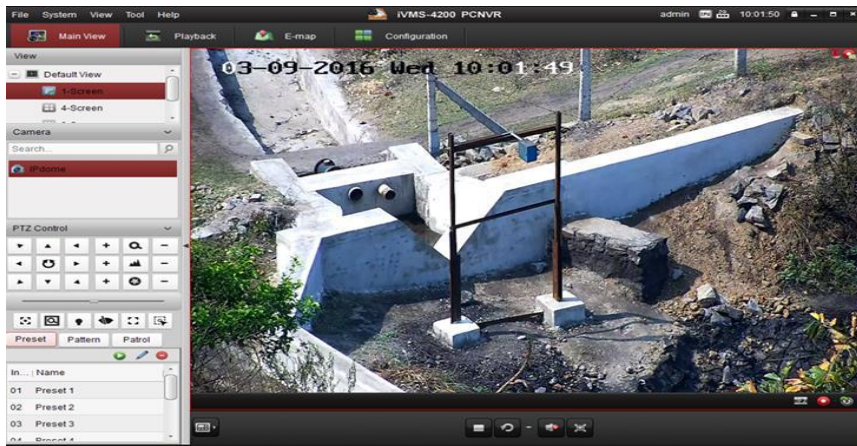
Compliance:

The Industrial wastewaters generated from various operations are handled through effluent management system provided in all operational dept. with the objective to treat the effluent and recycle the clear water. The HEMM maintenance shops have been provided with oil trap arrangement to recover the oil during washing of equipments. The recovered used oil during washing is sold to authorized recycler as per guideline and the effluent generated is checked for quality and recycled -reused in the system.



Oil trap in mines

Zero Effluent Discharge (ZLD) being maintained at all units including captive power plant (2x10MW FBC). A web camera (ip: 117.244.160.6) along with flow meter is installed at discharge end and all data being regularly submitted to state pollution control board.



Live web camera footage installed at discharge point



Online Effluent Monitoring System installed at site (Power Plant)

- (viii) **Vehicular emissions should be kept under control and regularly monitored Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.**

Compliance:

Vehicular emission is kept under control by regularly monitoring & maintenance of vehicles. Overloading of vehicles is avoided during mineral transport. All the vehicles during transport of material covered with tarpaulin sheet. In future, the mineral transportation will be done by Pipe conveyor.



Transportation of mineral

- (ix) **Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.**

Compliance:

A full-fledged Environmental laboratory is functioning with adequate number of pollution monitoring and analysis instruments. Accreditation of laboratory from State Pollution Control Board & NABL is under process.

- (x) **Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.**

Compliance:

All dusty areas such as crushers etc. are provided with dry fog system and fixed dust sprinklers so as to eliminate dust from source. All haul roads, are equipped with fixed and mobile dust sprinklers. All drill operations are wet only. The operators of various HEMM being operated inside the mines are provided with air-condition cabins. In addition dust mask has been provided to the personnel working in dusty area. The persons have been imparted necessary training on safe work practices and appraised the adverse consequences on health in case of any violation of the practices. Occupation health surveillance programme is being conducted on regular basis in our Hospital for health check up as per the coal mines rule. The health awareness programme is also being conducted regularly in all the departments.

- (xi) **A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the company.**

Compliance:

A separate Environment Management Cell is in place with qualified person reporting to Top management.

- (xii) **The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at Bhubaneswar.**

Compliance:

The Environmental Management Cell of West Bokaro division having separate fund for environmental protection measures / compliance to legal requirements. Besides above all other departments are having budgetary provision for environmental protection measures in their working area. The year wise expenditure on the above subject is reported to State pollution control Board. The expenditure occurred during the financial year 2016-2017 is more than Rs. 1500.00 Lakh.

- (xiii) **The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.**

Compliance:

Being complied with.

- (xiv) **A copy of the clearance letter will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.**

Compliance:

Complied with.

- (xv) **State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.**

Compliance:

Complied with.

- (xvi) **The Project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.**

Compliance:

Complied with.

AMBIENT AIR QUALITY REPORT

(As per National Ambient Air Quality Monitoring standard dated 18th November, 2009)

Name of Industry: **West Bokaro Colliery, Banji village**

Location	Date of Sampling (24 hrs.)	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Near Banji	03-04 April 17	62	31	14	22
	05-06 April 17	52	26	16	29
	10-11 April 17	57	28	14	28
	13-14 April 17	60	30	17	34
	19-20 April 17	58	32	16	32
	01-02 May 17	56	24	14	29
	04-05 May 17	62	28	16	32
	08-09 May 17	60	26	19	32
	11-12 May 17	56	24	14	22
	16-17 May 17	58	28	17	26
	22-23 May 17	60	26	14	28
	01-02 June 17	56	26	17	32
	06-07 June 17	52	24	16	26
	12-13 June 17	62	30	19	30
	19-20 June 17	48	22	12	24
	22-23 June 17	52	24	16	28
	28-29 June 17	46	22	14	26
	03-04 July.17	48	22	11	18
	06-07 July.17	52	34	13	28
	11-12 July.17	50	26	13	22
	13-14 July.17	42	20	14	24
	19-20 July.17	42	22	12	28
	25-26 July.17	40	20	16	26
	01-02 Aug.17	56	36	14	26
	07-08 Aug.17	50	28	12	30
	10-11 Aug.17	44	30	12	2
	16-17 Aug.17	42	24	14	26
	23-24 Aug.17	40	22	16	30
	30-31 Aug.17	52	36	16	36
	04-05 Sep.17	52	28	14	28
	07-08 Sep.17	50	28	16	30
	13-14 Sep.17	44	24	16	28
	18-19 Sep.17	42	22	14	34
21-22 Sep.17	48	28	16	32	
27-28 Sep.17	44	26	12	26	
Maximum (µg/m³)		62	36	19	36
Average (µg/m³)		51	26	15	27
Limit (µg/m³)		100	60	80	80

okay

AMBIENT AIR QUALITY REPORT

(As per National Ambient Air Quality Monitoring standard dated 18th November, 2009)

Name of Industry: **West Bokaro Colliery, Pundi village**

Location	Date of Sampling (24 hrs.)	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Near Pundi	03-04 April 17	58	24	14	24
	05-06 April 17	52	22	12	26
	10-11 April 17	56	26	19	28
	13-14 April 17	54	26	17	26
	19-20 April 17	58	28	19	32
	01-02 May 17	48	22	14	24
	04-05 May 17	56	28	17	28
	08-09 May 17	54	26	19	32
	11-12 May 17	52	24	13	22
	16-17 May 17	56	26	14	29
	22-23 May 17	58	28	20	32
	01-02 June 17	52	24	13	24
	06-07 June 17	44	22	16	26
	12-13 June 17	48	26	12	24
	19-20 June 17	42	22	14	26
	22-23 June 17	44	24	17	30
	28-29 June 17	52	26	19	28
	03-04 July.17	40	20	14	26
	06-07 July.17	48	22	14	24
	11-12 July.17	42	24	16	28
	13-14 July.17	44	28	14	24
	19-20 July.17	40	22	14	26
	25-26 July.17	40	20	12	28
	01-02 Aug.17	52	24	16	22
	07-08 Aug.17	52	26	14	30
	10-11 Aug.17	48	24	16	38
	16-17 Aug.17	42	22	14	22
	23-24 Aug.17	44	24	12	20
	30-31 Aug.17	52	28	18	32
	04-05 Sep.17	48	26	14	24
	07-08 Sep.17	52	28	20	20
	13-14 Sep.17	46	26	12	22
	18-19 Sep.17	44	24	16	28
21-22 Sep.17	48	27	12	22	
27-28 Sep.17	44	22	14	28	
Maximum (µg/m³)		58	28	20	38
Average (µg/m³)		49	25	15	26
Limit (µg/m³)		100	60	80	80

WKAU

AMBIENT AIR QUALITY REPORT

(As per National Ambient Air Quality Monitoring standard dated 18th November, 2009)

Name of Industry: **West Bokaro Colliery, Mukundabera village**

Location	Date of Sampling (24 hrs.)	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Mukundabera village	04-05 April 17	62	42	17	26
	11-12 April 17	78	46	13	31
	17-18 April 17	68	44	19	28
	24-25 April 17	70	42	17	32
	26-27 April 17	72	48	17	28
	02-03 May 17	74	44	19	26
	09-10 May 17	62	42	12	28
	15-16 May 17	66	40	16	32
	18-19 May 17	68	42	19	36
	24-25 May 17	70	44	20	32
	29-30 May 17	64	40	17	38
	05-06 June 17	68	40	21	23
	08-09 June 17	66	42	12	27
	14-15 June 17	70	44	16	32
	21-22 June 17	68	40	20	30
	27-28 June 17	62	44	16	22
	29-30 June 17	60	38	14	28
	05-06 Jul.17	62	44	10	34
	10-11 Jul.17	70	42	12	22
	17-18 Jul.17	66	32	18	32
	20-21 Jul.17	58	28	14	22
	24-25 Jul.17	44	22	16	24
	27-28 Jul.17	54	28	16	32
	03-04 Aug.17	72	44	14	28
	09-10 Aug.17	68	32	16	30
	14-15 Aug.17	56	28	14	28
	21-22 Aug.17	68	34	14	32
	24-25 Aug.17	72	32	18	36
	28-29 Aug.17	62	38	21	40
	06-07 Sep.17	68	42	22	38
	11-12 Sep.17	72	32	12	26
	19-20 Sep.17	56	26	10	28
	20-21 Sep.17	52	26	16	30
25-26 Sep.17	56	32	14	32	
28-29 Sep.17	52	28	16	28	
Maximum (µg/m³)		78	48	22	40
Average (µg/m³)		64	37	16	30
Limit (µg/m³)		100	60	80	80

AMBIENT AIR QUALITY REPORT

(As per National Ambient Air Quality Monitoring standard dated 18th November, 2009)

Name of Industry: **West Bokaro Colliery, Duni village**

Location	Date of Sampling (24 hrs.)	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Duni village	03-04 April 17	56	28	12	27
	05-06 April 17	44	22	14	24
	10-11 April 17	48	24	18	32
	13-14 April 17	46	26	22	38
	19-20 April 17	52	24	13	26
	01-02 May 17	42	21	13	24
	04-05 May 17	46	22	17	29
	08-09 May 17	54	32	14	32
	11-12 May 17	44	24	16	26
	16-17 May 17	48	26	19	28
	22-23 May 17	52	24	21	28
	01-02 June 17	50	22	17	26
	06-07 June 17	42	20	13	24
	12-13 June 17	48	26	17	28
	19-20 June 17	38	22	13	26
	22-23 June 17	40	22	14	28
	28-29 June 17	48	24	17	22
	03-04 July.17	40	24	18	32
	06-07 July.17	44	26	14	22
	11-12 July.17	44	26	16	28
	13-14 July.17	49	28	14	26
	19-20 July.17	42	26	12	28
	25-26 July.17	40	26	14	30
	01-02 Aug.17	46	26	16	22
	07-08 Aug.17	52	28	16	34
	10-11 Aug.17	48	26	12	30
	16-17 Aug.17	44	28	10	28
	23-24 Aug.17	44	26	12	26
	30-31 Aug.17	52	34	22	38
	04-05 Sep.17	42	32	16	32
	07-08 Sep.17	48	28	10	30
	13-14 Sep.17	44	26	12	28
	18-19 Sep.17	40	26	16	36
21-22 Sep.17	54	32	12	29	
27-28 Sep.17	44	28	16	32	
Maximum (µg/m³)		56	34	22	38
Average (µg/m³)		46	26	15	29
Limit (µg/m³)		100	60	80	80

W&A

AMBIENT AIR QUALITY REPORT

(As per National Ambient Air Quality Monitoring standard dated 18th November, 2009)

Name of Industry: **West Bokaro Colliery, Chainpur Basti**

Location	Date of Sampling (24 hrs.)	PM ₁₀	PM _{2.5}	SO ₂	NO _x
Chainpur Basti	04-05 April 17	70	38	17	32
	11-12 April 17	74	40	19	28
	17-18 April 17	72	42	22	32
	24-25 April 17	68	38	21	30
	26-27 April 17	70	37	16	29
	02-03 May 17	72	42	17	25
	09-10 May 17	70	38	21	32
	15-16 May 17	72	40	19	27
	18-19 May 17	74	42	20	25
	24-25 May 17	70	39	17	32
	29-30 May 17	66	38	16	29
	05-06 June 17	68	36	16	28
	08-09 June 17	66	39	17	23
	14-15 June 17	70	40	14	32
	21-22 June 17	68	37	19	28
	27-28 June 17	67	39	14	26
	29-30 June 17	64	34	13	28
	05-06 Jul.17	64	40	16	24
	10-11 Jul.17	54	28	10	34
	17-18 Jul.17	56	24	10	30
	20-21 Jul.17	52	22	12	28
	24-25 Jul.17	46	24	12	26
	27-28 Jul.17	58	28	22	32
	03-04 Aug.17	56	26	14	37
	09-10 Aug.17	72	44	14	28
	14-15 Aug.17	54	26	18	29
	21-22 Aug.17	48	24	10	27
	24-25 Aug.17	62	32	18	32
	28-29 Aug.17	56	28	18	32
	06-07 Sep.17	68	42	22	38
	11-12 Sep.17	62	32	14	30
	19-20 Sep.17	52	26	12	28
20-21 Sep.17	56	24	12	26	
25-26 Sep.17	52	28	10	28	
28-29 Sep.17	48	22	14	32	
Maximum (µg/m³)		74	44	22	38
Average (µg/m³)		63	34	16	29
Limit (µg/m³)		100	60	80	80

AIR QUALITY REPORT AT WORK PLACE

(As per GSR 742 (E), dated 25th Sept 2009)

Name of Industry: West Bokaro Colliery

No. of sampling points: 07

Sampling position: Mines (Q – SEB: CMC)

Location	Date of Sampling (24 hrs.)	SO ₂	NOX	RPM	SPM
Q – SEB (CMC)	03-04 April 2017	18	44	162	434
	01-02 May 2017	18	56	179	415
	01-02 June 2017	16	48	175	390
	03-04 July 2017	14	44	167	387
	26-27 July 2017	16	38	152	362
	01-02 August 2017	16	45	168	398
	30-31 August 2017	12	46	142	342
	04-05 Sep. 2017	18	44	170	410
	24-25 Sep. 2017	14	42	162	382
	Maximum (µg/m³)	18	56	179	434
Average (µg/m³)	16	45	164	391	
Limit (µg/m³)	120	120	300	700	

Sampling position: Mines (Q – AB: FRS)

Location	Date of Sampling (24 hrs.)	SO ₂	NOX	RPM	SPM
Q – AB (FRS)	04-05 April 2017	14	36	120	410
	02-03 May 2017	16	26	162	392
	05-06 June 2017	12	23	160	185
	04-05 July 2017	12	26	157	210
	26-27 July 2017	16	22	162	236
	02-03 August 2017	14	25	167	230
	24-25 August 2017	16	22	152	260
	05-06 Sep. 2017	11	22	168	340
	21-22 Sep. 2017	12	24	152	280
	Maximum (µg/m³)	16	36	168	410
Average (µg/m³)	14	25	156	283	
Limit (µg/m³)	120	120	300	700	

Sampling position: Mines (Q – E: FMS)

Location	Date of Sampling (24 hrs.)	SO ₂	NOX	RPM	SPM
Q – E (FMS)	05-06 April 2017	13	28	108	230
	03-04 May 2017	23	24	116	276
	06-07 June 2017	26	27	118	280
	05-06 Jul. 17	22	25	110	265
	14-15 July 2017	16	22	110	245
	03-04 August 2017	20	22	118	270
	30-31 August 2017	18	26	120	252
	06-07 Sep. 2017	18	24	122	290
	24-25 Sep. 2017	16	26	118	162
	Maximum (µg/m³)	26	28	122	290
Average (µg/m³)	19	25	116	252	
Limit (µg/m³)	120	120	300	700	

Sampling position: Washery Complex (W – II)

Location	Date of Sampling (24 hrs.)	SO ₂	NOX	RPM	SPM
Washery Complex (W – II)	06-05 April 2017	17	46	128	400
	04-05 May 2017	17	48	172	425
	07-08 June 2017	15	44	170	410
	06-07 July 2017	16	42	155	418
	14-15 July 2017	14	44	162	462
	07-08 August 2017	18	44	168	468
	24-25 August 2017	16	46	174	472
	07-08 Sep. 2017	26	44	172	484
	21-22 Sep. 2017	22	42	162	462
	Maximum (µg/m³)	26	48	174	484
Average (µg/m³)	18	44	163	445	
Limit (µg/m³)	120	120	300	700	

Wkay

AIR QUALITY REPORT AT WORK PLACE

(As per GSR 742 (E), dated 25th Sept 2009)

Sampling position: Washery Complex (W – III)

Location	Date of Sampling (24 hrs.)	SO2	NOX	RPM	SPM
Washery Complex (W – III)	06-05 April 2017	17	46	128	400
	04-05 May 2017	17	48	172	425
	07-08 June 2017	15	44	170	410
	06-07 July 2017	16	42	155	418
	14-15 July 2017	14	44	162	462
	07-08 August 2017	18	44	168	468
	24-25 August 2017	16	46	174	472
	07-08 Sep. 2017	26	44	172	484
	21-22 Sep. 2017	22	42	162	462
	Maximum (µg/m3)	26	48	174	484
Average (µg/m3)	18	44	163	445	
Limit (µg/m3)	120	120	300	700	

Sampling position: Power House

Location	Date of Sampling (24 hrs.)	SO2	NOX	RPM	SPM
Power House	06-05 April 2017	17	46	128	400
	04-05 May 2017	17	48	172	425
	07-08 June 2017	15	44	170	410
	06-07 July 2017	16	42	155	418
	14-15 July 2017	14	44	162	462
	07-08 August 2017	18	44	168	468
	24-25 August 2017	16	46	174	472
	07-08 Sep. 2017	26	44	172	484
	21-22 Sep. 2017	22	42	162	462
	Maximum (µg/m3)	26	48	174	484
Average (µg/m3)	18	44	163	445	
Limit (µg/m3)	120	120	300	700	

Sampling position: Logistics (Dispatch)

Location	Date of Sampling (24 hrs.)	SO2	NOX	RPM	SPM
Logistics (Dispatch)	03-04 April 2017	18	44	162	434
	01-02 May 2017	18	56	179	415
	01-02 June 2017	16	48	175	390
	10-11 July 2017	12	26	110	375
	17-18 July 2017	18	24	132	362
	08-09 August 2017	16	28	122	380
	21-22 August 2017	14	26	128	372
	11-12 Sep. 2017	20	32	126	410
	22-23 Sep. 2017	14	24	124	372
	Maximum (µg/m3)	20	56	179	434
Average (µg/m3)	16	34	140	390	
Limit (µg/m3)	120	120	300	700	

AMBIENT NOISE MONITORING

LOCATION		NOISE LEVELS dB(A)			
		DURING DAY TIME		DURING NIGHT TIME	
		LIMIT	ACTUAL	LIMIT	ACTUAL
Mines area	Q - SEB	75	64-68	70	58-60
	Q - AB	75	62-71	70	56-58
	Q - E	75	58-60	70	46-50
Washery Complex	W - II	75	67-72	70	60-65
	W - III	75	63-71	70	62-65
Power House		75	65-68	70	56-60
Logistics (Dispatch)		75	66-68	70	58-60

Welay

STACK EMISSION MONITORING REPORT

2 x 10 MW FBC Power Plant and 5 MWA DG set unit of, West Bokaro Division, TATA Steel Ltd

Sl. No.	Parameters	Details	
1	Name of industry	Power House	CPCB Limit: 100
2	Production capacity	2x10 MW	
3	Date of sampling	21.06.2017	
4	Weather condition	Normal dry	
5	Stack No if any	Boiler No. 02	
6	Stack height from ground meter	38	
7	Stack dia at sampling point (m)	2.28	
8	Area of stack (m ²)	4.085	
9	Height of sampling port (meter)	18.3	
10	Atmospheric temperature (deg C)	32	
11	Stack gas temperature (deg C)	102	
12	Velocity of gas (m/s)	24.53	
13	Quantity of gas flow (Nm ³ /hr)	211029	
14	Dust concentration (mg/Ncu.m)	88	
15	Concentration of Sox	90	
16	Concentration of NOx	126	
17	Details of Pollution Control Device attached with stack	Electro Static Precipitator (ESP)	
18	Name of fuel & quantity used	Rejects coal 700 T/Day	

Note:

- 1 Online stack monitoring system (PM, Sox & NOx) is installed for both chimneys / stack of Pow
- 2 Continuous monitoring of stack (every 15 min) data is uploaded at JSPCB/CPCB server.
- 3 All the values are within limit.

utray

EFFLUENT QUALITY

SAMPLING DATE: Average of April 2017 to September 2017

Location		LEVELS			
		pH	TSS	COD	Oil & Grease
Mines area	Q - SEB	8.2	21	43	<1.0
	Q - AB	8.0	19	48	<1.0
	Q - E	7.9	14	28	<1.0
LIMIT		5.5-9.0	100 mg/l	250 mg/l	05 mg/l

SAMPLING DATE: Average of April 2017 to September 2017

LOCATION	LEVELS					
	pH	TSS	COD	BOD	Oil & Grease	Phenolics
Washery-II, TP-8	8.2	20	85	7.7	<1.0	<1.0
LIMIT	5.5-9.0	100 mg/l	250 mg/l	30 mg/l	05 mg/l	1.0 mg/l

SAMPLING DATE: Average of April 2017 to September 2017

LOCATION	LEVELS					
	pH	TSS	COD	BOD	Oil & Grease	Phenolics
Washery-III, Effluent Pond	7.9	84	133	7.8	<1.0	<1.0
LIMIT	5.5-9.0	100 mg/l	250 mg/l	30 mg/l	05 mg/l	1.0 mg/l

- Note: 1. Zero liquid discharge (ZLD) is being maintained at Washery. 100% effluent generated is recycled and reused.
2. All values are well within limits.

SAMPLING DATE: Average of April 2017 to September 2017

LOCATION	LEVELS OF POLLUTANTS								
	Temp in C	Color	pH	TSS	TDS	TS	COD	BOD	Oil & Grease
SEB Ash Pond	-	Colorless	8	17	973	990	75	7.8	<1.0
LIMIT	5 C difference	colorless	6.5- 8.5	100 mg/l	2100 mg/l	2200 mg/l	250 mg/l	30 mg/l	5 mg/l

- Note: 1. Zero liquid discharge (ZLD) is being maintained at Ash pond.
2. Online effluent monitoring system (web camera & flow meter) is installed at discharge end.
3. All values are well within limits.

SAMPLING DATE: Average of April 2017 to September 2017

LOCATION	LEVELS					
	pH	TSS	COD	BOD	Oil & Grease	Phenolics
QLC	7.8	17.0	37.3	7.7	<1.0	<1.0
LIMIT	5.5-9.0	100 mg/l	250 mg/l	30 mg/l	05 mg/l	1.0 mg/l

- Note: 1. Zero liquid discharge (ZLD) is being maintained at Railway siding.
2. Oil tarp is installed at HEMM washing area.
3. All values are well within limits.

WSP

SEWAGE TREATMENT PLANT QUALITY

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	Apr-17	8.5	6.5 – 9.0
2	BOD (mg/l)		8.9	<10
3	COD (mg/l)		36	<50
4	TSS (mg/l)		14	<20
5	Fecal Coliform		32	<100

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	May-17	7.9	6.5 – 9.0
2	BOD (mg/l)		8.8	<10
3	COD (mg/l)		34	<50
4	TSS (mg/l)		12	<20
5	Fecal Coliform		18	<100

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	Jun-17	7.8	6.5 – 9.0
2	BOD (mg/l)		9.2	<10
3	COD (mg/l)		36	<50
4	TSS (mg/l)		16	<20
5	Fecal Coliform		22	<100

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	Jul-17	8.1	6.5 – 9.0
2	BOD (mg/l)		8.7	<10
3	COD (mg/l)		32	<50
4	TSS (mg/l)		18	<20
5	Fecal Coliform		25	<100

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	Aug-17	8	6.5 – 9.0
2	BOD (mg/l)		8.9	<10
3	COD (mg/l)		34	<50
4	TSS (mg/l)		16	<20
5	Fecal Coliform		16	<100

Sl. No.	Parameter	Date of Sampling	Level	Standard
1	pH	Sep-17	7.6	6.5 – 9.0
2	BOD (mg/l)		9.6	<10
3	COD (mg/l)		42	<50
4	TSS (mg/l)		14	<20
5	Fecal Coliform		40	<100

- Note: 1. Zero Liquid Discharge (ZLD) maintained at STP.
 2. The water is recycled and reused for dust suppression and horticulture purpose.
 3. All values are within the limits.

W. K. S.

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Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer : Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/P&E/17-18/117
Date : 01.09.2017
Sample No. : MSK/KOL/ENV/P&E/17-18/117
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-01.09.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	:Effluent Water
2	Sample Mark (if any, given by the customer)	:NA
3	Date of sampling	:21.08.2017
4	Place of sampling	:EW1QE
5	Environmental conditions during sampling	:NA
6	Sampling Plan & Procedures used	:APHA 22 nd Edition,2012, 1060 B,C


Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	pH at 23 ^o C	APHA 22 nd edition,2012, 4500-H+B	7.8
2.	TSS in mg/l	APHA 22 nd edition,2012, 2540D	9.8
3.	TDS in mg/l	APHA 22 nd edition,2012,2540C	1140
4.	BOD in mg/l	APHA 22 nd edition,2012, 5210B	<2.0
5.	COD in mg/l	APHA 22 nd edition,2012, 5220B	<4.0
6.	Oil & Grease in mg/l	APHA 22 nd edition,2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition,2012,2540E	9.8
*8.	MLVSS in mg/l	APHA 22 nd edition,2012,2540E	5.3
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	23

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name :Asim Kumar Jana
Designation :Office Assistant

for **Mitra S. K. Private Limited**
Signature : 
Name : Bodhisatta Maiti
Designation : Technical In Charge
Authorized Signatory

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 10 days after analysis.

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TEST REPORT

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/118
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/118
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Effluent Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: EW-3(Trailing Pond)
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C

Analysis Result


SL. No.	Test Parameter	Test Method	Result
1.	pH at 25 ^o C	APHA 22 nd edition, 2012, 4500-H+B	7.4
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	33
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	732
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	9.2
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	51
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition, 2012, 2540E	33
*8.	MLVSS in mg/l	APHA 22 nd edition, 2012, 2540E	13
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	25

* This parameter not in our NABL scope

Report prepared by:

Signature : 
 Name : Asim Kumar Jana
 Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
 Name : Bodhisatta Maiti
 Designation : Technical In Charge
Authorized Signatory

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TEST REPORT

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/119
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/119
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Effluent Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: EW6 QSEB
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C

Analysis Result


SL. No.	Test Parameter	Test Method	Result
1.	pH at 23 ^o C	APHA 22 nd edition, 2012, 4500-H+B	6.2
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	12
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	1220
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	2.2
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	7.8
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition, 2012, 2540E	12
*8.	MLVSS in mg/l	APHA 22 nd edition, 2012, 2540E	8.3
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	23

* This parameter not in our NABL scope

Report prepared by:

Signature : 
 Name : Asim Kumar Jana
 Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
 Name : Bodhisatta Maiti
 Designation : Technical In Charge
Authorized Signatory

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 10 days after analysis.

Mitra S. K. Private Limited

3, Pagladanga Road, P-48,
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Kolkata 700015.
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Email : mitrasklab@yahoo.com
Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/120
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/120
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Effluent Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: Mukundabera water Intake Pond.
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C


Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	pH at 22 ^o C	APHA 22 nd edition, 2012, 4500-H+B	6.5
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	7.8
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	1040
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	<2.0
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	<4.0
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition, 2012, 2540E	7.8
*8.	MLVSS in mg/l	APHA 22 nd edition, 2012, 2540E	3.9
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	22

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited
Signature : 
Name : Bodhisatta Maiti
Designation : Technical In Charge
Authorized Signatory

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Head Office: Shrachi Centre (5th floor), 74B, A.J.C. Bose Road, Kolkata - 700 016. West Bengal, India.
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Email : mitrasklab@yahoo.com
Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/122
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/122
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Effluent Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: EW10 QAB
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C

Analysis Result


SL. No.	Test Parameter	Test Method	Result
1.	pH at 24 ^o C	APHA 22 nd edition, 2012, 4500-H+B	7.5
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	12
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	1452
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	<2.0
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	<4.0
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition, 2012, 2540E	12
*8.	MLVSS in mg/l	APHA 22 nd edition, 2012, 2540E	<2.5
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	24

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Bodhisatta Maiti
Designation : Technical In Charge
Authorized Signatory

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Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/123
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/123
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Effluent Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: EW11 Ash Pond
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C

Analysis Result


SL. No.	Test Parameter	Test Method	Result
1.	pH at 24 ^o C	APHA 22 nd edition, 2012, 4500-H+B	6.5
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	8.0
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	360
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	2.0
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	12
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
*7.	MLSS in mg/l	APHA 22 nd edition, 2012, 2540E	8.0
*8.	MLVSS in mg/l	APHA 22 nd edition, 2012, 2540E	3.7
9.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	24

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Bodhisatta Maiti
Designation : Technical In Charge
Authorized Signatory

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TEST REPORT

Name & Address of the Customer :	Report No.	: C/ENV/P&E/17-18/124
Tata Steel Limited,	Date	: 01.09.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/P&E/17-18/124
Jharkhand, Pin No-825314.	Date of receipt of sample	: 26.08.2017
	Date(s) of performance	: 26.08.2017-01.09.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Surface Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: Bhutiya River Water Upon Stream
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C


Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	pH at 24 ^o C	APHA 22 nd edition, 2012, 4500-H+B	7.5
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	107
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	350
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	<2.0
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	7.9
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
7.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	24

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited
Signature : 
Name : Mousumi Sengupta
Designation : MR & QAM
Authorized Signatory

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Mitra S. K. Private Limited



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**TEST REPORT**

Name & Address of the Customer : Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/P&E/17-18/125
Date : 01.09.2017
Sample No. : MSK/KOL/ENV/P&E/17-18/125
Date of receipt of sample : 26.08.2017
Date(s) of performance : 26.08.2017-01.09.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Description of sample (As declared by customer)	: Surface Water
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21.08.2017
4	Place of sampling	: Duni River Down Stream
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: APHA 22 nd Edition, 2012, 1060 B,C

Analysis Result


SL. No.	Test Parameter	Test Method	Result
1.	pH at 24 ^o C	APHA 22 nd edition, 2012, 4500-H+B	6.8
2.	TSS in mg/l	APHA 22 nd edition, 2012, 2540D	83
3.	TDS in mg/l	APHA 22 nd edition, 2012, 2540C	400
4.	BOD in mg/l	APHA 22 nd edition, 2012, 5210B	2.2
5.	COD in mg/l	APHA 22 nd edition, 2012, 5220B	16
6.	Oil & Grease in mg/l	APHA 22 nd edition, 2012, 5520B	<1.4
7.	Temperature in ^o C	IS:3025(Part-9) 1984, Reaf-2006	24

* This parameter not in our NABL scope

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Mousumi Sengupta
Designation : MR & QAM
Authorized Signatory

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Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/300A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/300A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 18/19.08.2017 (10.30 hr-10.30 hr.)
4	Place of sampling	: Baraghuti Village
5	Environmental conditions during sampling	: 1) Temperature : 24-34 °C 2) Barometric Pressure: 751 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature :

Name : Asim Kumar Jana

Designation : Office Assistant

for Mitra S. K. Private Limited

Signature :

Name : Pradip Bag

Designation : Technical In Charge

Authorized Signatory

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Report No. : C/ENV/A/17-18/300A
Sample No. : MSK/KOL/ENV/A/17-18/300A



Analysis Result

Location: Baraghuti Village			Date of sampling: 18/19.08.2017 (10.30 hr-10.30 hr.)		
Sampling Done by: T.Mondal/Amar Mullick			Sampling done as per : IS/CPCB Guidelines (Volume-1)		
Environmental Condition :					
1) Temperature : 24-34 °C		2) Barometric Pressure: 751 mm of Hg		3) Rain Fall : Yes	
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	40	100	IS: 5182 (Part-23)-2006 Reff: 2014
2	Particulate matter (<2.5µm)	µg/m ³	17	60	TPM/MSK/E/5/C based on USEPA CFR-40,Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	8.2	80	IS: 5182 (Part-2)-2001 Reff: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	26.6	80	IS: 5182 (Part- 6)-2006, Reff: 2012
5	Carbon monoxide as CO	mg/m ³	0.52	2	IS: 5182 (Part- 10)-1999, Reff: 2014 (NDIR)
6	Ozone (O ₃)	µg/m ³	21.2	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	20.3	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality					
Remarks : The above sampling is done by using the following Machines					
Sr no.	Calibration Validity		Model/ Make No./ID		
222-DTJ-2016,420-DTJ-2016	30.07.2018		APM-860 /LES-411 (Lata Envirotech)/RDS-03		
07-DTF-2016	17.07.2018		APM-154(Lata Envirotech)/FDS-04		

Report prepared by:

Signature :

Asim Kumar Jana

Name :

Asim Kumar Jana

Designation :

Office Assistant

for Mitra S. K. Private Limited

Signature :

Pradip Bag

Name :

Pradip Bag

Designation :

Technical In Charge

Authorized Signatory

Mitra S. K. Private Limited

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Tel. : 91 33 23230072. Fax : 91 33 23230078.

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**TEST REPORT**

Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/301A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/301A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 18/19.08.2017 (09.30 hr-09.30 hr.)
4	Place of sampling	: Mukandabada Village
5	Environmental conditions during sampling	: 1) Temperature : 26-32 °C 2) Barometric Pressure: 751 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature :

Name : Asim Kumar Jana

Designation : Office Assistant

for **Mitra S. K. Private Limited**

Signature :

Name : Pradip Bag

Designation : Technical In Charge

Authorized Signatory

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Report No. : C/ENV/A/17-18/301A
Sample No. : MSK/KOL/ENV/A/17-18/301A

Analysis Result

Location: Mukandabada Village			Date of sampling: 18/19.08.2017 (09.30 hr-09.30 hr.)		
Sampling Done by: T.Mondal/Amar Mullick			Sampling done as per : IS/CPCB Guidelines (Volume-1)		
Environmental Condition :					
1) Temperature : 26-32 °C		2) Barometric Pressure: 751 mm of Hg		3) Rain Fall : Yes	
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	48	100	IS: 5182 (Part-23)-2006 Reff: 2014
2	Particulate matter (<2.5µm)	µg/m ³	21	60	TPM/MSK/E/5/C based on USEPA CFR-40, Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	7.3	80	IS: 5182 (Part-2)-2001 Reff: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	20.2	80	IS: 5182 (Part-6)-2006, Reff: 2012
5	Carbon monoxide as CO	mg/m ³	0.46	2	IS: 5182 (Part-10)-1999, Reff: 2014 (NDIR)
6	Ozone (O ₃)	µg/m ³	16.6	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn. By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	<10.0	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn. By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012-3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality					
Remarks : The above sampling is done by using the following Machines					
Sr no.	Calibration Validity		Model/ Make No./ID		
223-DTJ-2016,421-DTJ-2016	30.07.2018		APM-860 /LES-411 (Lata Envirotech)/RDS-04		
02-DTF-2016	17.07.2018		APM-154(Lata Envirotech)/FDS-02		

Report prepared by:

Signature :

Name : Asim Kumar Jana

Designation : Office Assistant

for Mitra S. K. Private Limited

Signature :

Name : Pradip Bag

Designation : Technical In Charge

Authorized Signatory

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TEST REPORT


Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/302A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/302A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 19/20.08.2017 (11.00 hr-11.00 hr.)
4	Place of sampling	: Pundi Village
5	Environmental conditions during sampling	: 1) Temperature : 24-34 °C 2) Barometric Pressure: 751 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
Designation : Technical In Charge
Authorized Signatory

- The results relate only to the item(s) tested.
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- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 10 days after analysis.

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Web : www.mitrask.com

MSK
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Report No. : C/ENV/A/17-18/302A
Sample No. : MSK/KOL/ENV/A/17-18/302A


Analysis Result

Location: Pundi Village			Date of sampling: 19/20.08.2017 (11.00 hr-11.00 hr.)		
Sampling Done by: T.Mondal/Amar Mullick			Sampling done as per : IS/CPCB Guidelines (Volume-1)		
Environmental Condition :					
1) Temperature : 24-34 °C		2) Barometric Pressure: 751 mm of Hg		3) Rain Fall : Yes	
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	36	100	IS: 5182 (Part-23)-2006 Reff: 2014
2	Particulate matter (<2.5µm)	µg/m ³	14	60	TPM/MSK/E/5/C based on USEPA CFR-40,Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	7.2	80	IS: 5182 (Part-2)-2001 Reff: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	21.2	80	IS: 5182 (Part- 6)-2006, Reff: 2012
5	Carbon monoxide as CO	mg/m ³	0.48	2	IS: 5182 (Part- 10)-1999, Reff: 2014 (NDIR)
6	Ozone (O ₃)	µg/m ³	18.5	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	<10.0	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality					
Remarks : The above sampling is done by using the following Machines					
Sr no.	Calibration Validity		Model/ Make No./ID		
222-DTJ-2016,420-DTJ-2016	30.07.2018		APM-860 /LES-411 (Lata Envirotech)/RDS-03		
07-DTF-2016	17.07.2018		APM-154(Lata Envirotech)/FDS-04		

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
Designation : Technical In Charge
Authorized Signatory

Mitra S. K. Private Limited

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Web : www.mitrask.com



TEST REPORT

Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/303A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/303A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 19/20.08.2017 (10.10 hr-10.10 hr.)
4	Place of sampling	: Duni Village
5	Environmental conditions during sampling	: 1) Temperature : 26-34 °C 2) Barometric Pressure: 753 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature :

Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature :

Name : Pradip Bag
Designation : Technical In Charge
Authorized Signatory

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 10 days after analysis.

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Web : www.mitrask.com



Report No. : C/ENV/A/17-18/303A
Sample No. : MSK/KOL/ENV/A/17-18/303A

Analysis Result


Location: Duni Village				Date of sampling: 19/20.08.2017 (10.10 hr-10.10 hr.)	
Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per : IS/CPCB Guidelines (Volume-1)	
Environmental Condition : 1) Temperature : 26-34 °C 2) Barometric Pressure: 753 mm of Hg 3) Rain Fall : Yes					
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	61	100	IS: 5182 (Part-23)-2006 Reff: 2014
2	Particulate matter (<2.5µm)	µg/m ³	38	60	TPM/MSK/E/5/C based on USEPA CFR-40,Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	6.6	80	IS: 5182 (Part-2)-2001 Reff: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	18.5	80	IS: 5182 (Part- 6)-2006, Reff: 2012
5	Carbon monoxide as CO	mg/m ³	0.63	2	IS: 5182 (Part- 10)-1999, Reff: 2014 (NDIR)
6	Ozone (O ₃)	µg/m ³	15.5	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	23.3	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999


NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality

Remarks : The above sampling is done by using the following Machines

Sr no.	Calibration Validity	Model/ Make No./ID
223-DTJ-2016,421-DTJ-2016	30.07.2018	APM-860 /LES-411 (Lata Envirotech)/RDS-04
02-DTF-2016	17.07.2018	APM-154(Lata Envirotech)/FDS-02

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited
Signature : 
Name : Pradip Bag
Designation : Technical In Charge
Authorized Signatory

Mitra S. K. Private Limited



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**TEST REPORT**


Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.


Report No. : C/ENV/A/17-18/304A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/304A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 20/21.08.2017 (10.40 hr-10.40 hr.)
4	Place of sampling	: Chainpur Village
5	Environmental conditions during sampling	: 1) Temperature : 24-34 °C 2) Barometric Pressure: 751 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for **Mitra S. K. Private Limited**
Signature : 
Name : Pradip Bag
Designation : Technical In Charge
Authorized Signatory

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Report No. : C/ENV/A/17-18/304A
Sample No. : MSK/KOL/ENV/A/17-18/304A

Analysis Result

Location: Chainpur Village				Date of sampling: 20/21.08.2017 (10.40 hr-10.40 hr.)	
Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per : IS/CPCB Guidelines (Volume-1)	
Environmental Condition :					
1) Temperature : 24-34 °C		2) Barometric Pressure: 751 mm of Hg		3) Rain Fall : Yes	
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	52	100	IS: 5182 (Part-23)-2006 Ref: 2014
2	Particulate matter (<2.5µm)	µg/m ³	20	60	TPM/MSK/E/5/C based on USEPA CFR-40, Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	5.9	80	IS: 5182 (Part-2)-2001 Ref: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	27.5	80	IS: 5182 (Part- 6)-2006, Ref: 2012
5	Carbon monoxide as CO	mg/m ³	0.66	2	IS: 5182 (Part- 10)-1999, Ref: 2014 (NDIR) *
6	Ozone (O ₃)	µg/m ³	17.5	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn.By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	16.6	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn.By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality					
Remarks : The above sampling is done by using the following Machines					
Sr no.	Calibration Validity	Model/ Make No./ID			
222-DTJ-2016, 420-DTJ-2016	30.07.2018	APM-860 /LES-411 (Lata Envirotech)/RDS-03			
07-DTF-2016	17.07.2018	APM-154(Lata Envirotech)/FDS-04			

Report prepared by:

Signature

Name

: Asim Kumar Jana

Designation

: Office Assistant

for Mitra S. K. Private Limited

Signature

Name

Designation

: Pradip Bag

: Technical In Charge

Authorized Signatory

Mitra S. K. Private Limited

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Email : mitrasklab@yahoo.com

Web : www.mitrask.com



TEST REPORT

Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/305A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/305A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 20/21.08.2017 (10.50 hr-11.50 hr.)
4	Place of sampling	: Bangi Village
5	Environmental conditions during sampling	: 1) Temperature : 27-34 °C 2) Barometric Pressure: 754 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature

Name

: Asim Kumar Jana

Designation

: Office Assistant

for Mitra S. K. Private Limited

Signature

Name

: Pradip Bag

Designation

: Technical In Charge

Authorized Signatory

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Web : www.mitrask.com

MSK
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T - 2303

Report No. : C/ENV/A/17-18/305A
Sample No. : MSK/KOL/ENV/A/17-18/305A

Analysis Result

Location : Bangi Village				Date of sampling : 20/21.08.2017 (10.50 hr-11.50 hr.)	
Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per : IS/CPCB Guidelines (Volume-1)	
Environmental Condition :					
1) Temperature : 27-34 °C		2) Barometric Pressure: 754 mm of Hg		3) Rain Fall : Yes	
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	42	100	IS: 5182 (Part-23)-2006 Ref: 2014
2	Particulate matter (<2.5µm)	µg/m ³	16	60	TPM/MSK/E/5/C based on USEPA CFR-40, Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	7.3	80	IS: 5182 (Part-2)-2001 Ref: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	22.5	80	IS: 5182 (Part- 6)-2006, Ref: 2012
5	Carbon monoxide as CO	mg/m ³	0.34	2	IS: 5182 (Part- 10)-1999, Ref: 2014 (NDR)
6	Ozone (O ₃)	µg/m ³	12.2	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	<10.0	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling , 3 rd Edn.By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999
NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality					
Remarks : The above sampling is done by using the following Machines					
Sr no.	Calibration Validity		Model/ Make No./ID		
223-DTJ-2016,421-DTJ-2016	30.07.2018		APM-860 /LES-411 (Lata Envirotech)/RDS-04		
02-DTF-2016	17.07.2018		APM-154 (Lata Envirotech)/FDS-02		

Report prepared by:

Signature

Asim

Name

: Asim Kumar Jana

Designation

: Office Assistant

for Mitra S. K. Private Limited

Signature

Pradip

Name

: Pradip Bag

Designation

: Technical In Charge

Authorized Signatory

Mitra S. K. Private Limited

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Kolkata 700015.
Tel. : 91 33 23230072. Fax : 91 33 23230078.
Email : mitrasklab@yahoo.com
Web : www.mitrask.com

**TEST REPORT**

Name & Address of the Customer :
Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/306A
Date : 22.11.2017
Sample No. : MSK/KOL/ENV/A/17-18/306A
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Ambient Air
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21/22.08.2017 (11.20 hr-11.20 hr.)
4	Place of sampling	: Atana Village
5	Environmental conditions during sampling	: Temperature : 28.36 °C 2) Barometric Pressure: 752 mm of Hg 3) Rain Fall : Yes
6	Sampling Done by	: T.Mondal/Amar Mullick
7	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)

Report prepared by:

Signature

Asim

Name

: Asim Kumar Jana

Designation

: Office Assistant

for **Mitra S. K. Private Limited**

Signature

Pradip

Name

: Pradip Bag

Designation

: Technical In Charge

Authorized Signatory

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Web : www.mitrask.com



Report No. : C/ENV/A/17-18/306A
Sample No. : MSK/KOL/ENV/A/17-18/306A

Analysis Result

Location: Atana Village					Date of sampling: 21/22.08.2017 (11.20 hr-11.20 hr.)
Sampling Done by: T.Mondal/Amar Mullick					Sampling done as per : IS/CPCB Guidelines (Volume-1)
Environmental Condition :					3) Rain Fall : Yes
1) Temperature : 28.36 °C					2) Barometric Pressure: 752 mm of Hg
Sl. No.	POLLUTANT	Unit	RESULT	LIMIT	METHOD OF TEST REFERENCE
1	Particulate matter (<10 µm)	µg/m ³	44	100	IS: 5182 (Part-23)-2006 Ref: 2014
2	Particulate matter (<2.5µm)	µg/m ³	20	60	TPM/MSK/E/5/C based on USEPA CFR-40, Part-50, Appendix-L, 2006
3	Sulphur dioxide as SO ₂	µg/m ³	6.6	80	IS: 5182 (Part-2)-2001 Ref: 2012
4	Nitrogen dioxide as NO ₂	µg/m ³	27.8	80	IS: 5182 (Part-6)-2006, Ref: 2012
5	Carbon monoxide as CO	mg/m ³	0.36	2	IS: 5182 (Part-10)-1999, Ref: 2014 (NDIR)
6	Ozone (O ₃)	µg/m ³	16.6	180	TPM/MSK/E/9/G(II) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn. By James P. Lodge (Method-411)
7	Ammonia (NH ₃)	µg/m ³	24.2	400	TPM/MSK/E/9/G(I) Issued on 01.10.2013 based on Air Sampling, 3 rd Edn. By James P. Lodge (Method-401)
8	Lead (Pb)	µg/m ³	<0.02	1	EPA IO-3.2, June-1999
9	Nickel (Ni)	ng/m ³	<4.0	20	EPA IO-3.2, June-1999
10	Arsenic (As)	ng/m ³	<1.0	6	TPM/MSK/E/4/L based on APHA 22 nd 2012- 3114C
11	Total Chromium (Cr)	µg/m ³	<0.06	---	EPA IO-3.2, June-1999

NOTE: Limit as per CPCB notification, New Delhi, 18th November 2009, for Ambient air quality
Remarks : The above sampling is done by using the following Machines

Sr no.	Calibration Validity	Model/ Make No./ID
222-DTJ-2016, 420-DTJ-2016	30.07.2018	APM-860 /LES-411 (Lata Envirotech)/RDS-03
07-DTF-2016	17.07.2018	APM-154(Lata Envirotech)/FDS-04

Report prepared by:

Signature

Name

Designation



: Asim Kumar Jana

: Office Assistant

for Mitra S. K. Private Limited

Signature

Name

Designation



: Pradip Bag

: Technical In Charge

Authorized Signatory

Mitra S. K. Private Limited



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Kolkata 700015.
Tel. : 91 33 23230072. Fax : 91 33 23230078.
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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/307
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/307
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 18/19.08.2017
4	Place of sampling	: Murandabeda Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling done by: T.Mondal/Amar Mullick				Sampling done as per IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
307	Murandabeda Village	18/19.08.2017	Residential Area	54.8	44.8	55	45


Note : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.

Machine Details		
Sr. No.	Calibration Validity up to	Model & Make No./ID
Q636998	21.05.2018	LUTRON,SL-4033SD/SLM-06

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
Designation : Executive Chemist
Authorized Signatory

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- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 10 days after analysis.

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Page 1 of 1

Mitra S. K. Private Limited



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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/308
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/308
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 19/20.08.2017
4	Place of sampling	: Pundi Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling done by: T.Mondal/Amar Mullick				Sampling done as per IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
308	Pundi Village	19/20.08.2017	Residential Area	54.5	43.5	55	45
Note: : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.		Calibration Validity up to		Model & Make No./ID			
Q636998		21.05.2018		LUTRON,SL-4033SD/SLM-06			

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/309
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/309
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 20/21.08.2017
4	Place of sampling	: Washery Area
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling done by: Ashis Roy & Torab Mandal				Sampling done as per IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
309	Washery Area	20/21.08.2017	Industrial Area	74.2	69.5	75	70
Note : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.	Calibration Validity up to			Model & Make No./ID			
Q636998	21.05.2018			LUTRON,SL-4033SD/SLM-06			

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
Designation : Executive Chemist
Authorized Signatory

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Mitra S. K. Private Limited



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**TEST REPORT**

Name & Address of the Customer : Tata Steel Limited,
West Bokaro Division, Ghatotand,
Jharkhand, Pin No-825314.

Report No. : C/ENV/A/17-18/310
Date : 30.08.2017
Sample No. : MSK/KOL/ENV/A/17-18/310
Date of receipt of sample : 23.08.2017
Date(s) of performance : 23.08.2017-30.08.2017
Ref. No. & Date : NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21/22.08.2017
4	Place of sampling	: Chinpur Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
310	Chinpur Village	21/22.08.2017	Residential Area	54.8	39.6	55	45
Note : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.		Calibration Validity up to		Model & Make No./ID			
Q636998		21.05.2018		LUTRON,SL-4033SD/SLM-06			

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
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TEST REPORT

Name & Address of the Customer : Tata Steel Limited, West Bokaro Division, Ghatotand, Jharkhand, Pin No-825314.	Report No.	: C/ENV/A/17-18/311
	Date	: 30.08.2017
	Sample No.	: MSK/KOL/ENV/A/17-18/311
	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 18/19.08.2017
4	Place of sampling	: Mines Area
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)

Analysis Result


Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per: IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
311	Mines Area	18/19.08.2017	Industrial Area	67.5	54.5	75	70

Note: : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.


Machine Details

Sr. No.	Calibration Validity up to	Model & Make No./ID
Q634606	25.05.2018	LUTRON,SL-4033SD/SLM-05

Report prepared by:

Signature : 
Name : Asim Kumar Jana
Designation : Office Assistant

for Mitra S. K. Private Limited

Signature : 
Name : Pradip Bag
Designation : Executive Chemist
Authorized Signatory

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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/312
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/312
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 19/20.08.2017
4	Place of sampling	: Dhuni Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per: IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
312	Dhuni Village	19/20.08.2017	Residential Area	54.2	44.2	55	45
Note: : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.		Calibration Validity up to		Model & Make No./ID			
Q634606		25.05.2018		LUTRON,SL-4033SD/SLM-05			

Report prepared by:

Signature : 
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for Mitra S. K. Private Limited

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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/313
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/313
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 20/21.08.2017
4	Place of sampling	: Bangi Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per: IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
313	Bangi Village	20/21.08.2017	Residential Area	53.5	43.7	55	45
Note : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.		Calibration Validity up to		Model & Make No./ID			
Q634606		25.05.2018		LUTRON,SL-4033SD/SLM-05			

Report prepared by:

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**TEST REPORT**

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/314
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/314
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 20/21.08.2017
4	Place of sampling	: Power House Area
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per: IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
314	Power House Area	20/21.08.2017	Industrial Area	73.8	68.5	75	70
Note: : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
Machine Details							
Sr. No.		Calibration Validity up to		Model & Make No./ID			
Q634606		25.05.2018		LUTRON,SL-4033SD/SLM-05			

Report prepared by:

Signature : 
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TEST REPORT

Name & Address of the Customer :	Report No.	: C/ENV/A/17-18/315
Tata Steel Limited,	Date	: 30.08.2017
West Bokaro Division, Ghatotand,	Sample No.	: MSK/KOL/ENV/A/17-18/315
Jharkhand, Pin No-825314.	Date of receipt of sample	: 23.08.2017
	Date(s) of performance	: 23.08.2017-30.08.2017
	Ref. No. & Date	: NA


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Description of sample (As declared by customer)	: Noise
2	Sample Mark (if any, given by the customer)	: NA
3	Date of sampling	: 21/22.08.2017
4	Place of sampling	: Atna Village
5	Environmental conditions during sampling	: NA
6	Sampling Plan & Procedures used	: IS : 9989:1981 (Reff.-2014)


Analysis Result

Sampling Done by: T.Mondal/Amar Mullick				Sampling done as per: IS : 9989:1981 (Reff.-2014)			
Sample Code	Location Name	Date of Monitoring	Type of area	Day time Leq dB (A)	Night time Leq dB (A)	Permissible limits as per SPCB/ CPCB Standards	
						Day time Leq dB(A)	Night time Leq dB(A)
315	Atna Village	21/22.08.2017	Residential Area	53.1	42.5	55	45
Note: : Day time 06.00 Hr-22.00 Hr. Night time: 22.00 hr. - 6.00 hr.							
<u>Machine Details</u>							
Sr. No.		Calibration Validity up to			Model & Make No./ID		
Q634606		25.05.2018			LUTRON,SL-4033SD/SLM-05		

Report prepared by:

Signature : 
 Name : Asim Kumar Jana
 Designation : Office Assistant

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Signature : 
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