



The Additional Principal Chief Conservator of Forests (C)
Ministry of Environment, Forests & Climate Change,
Govt. of India
Bungalow No. A-2, Shyamali Colony
Ranchi-834002, Jharkhand
Tel: 0651-2410007, 2410002, Email: ro.ranchi-mef@gov.in

MD/ENV/ 421 /101/19
Date: 27.11.2019

Ref: Environmental Clearance letter no. J-11015/104/2011.IA.II (M) dated: 10.06.2013.

Sub: Half-yearly compliance status report of Environmental Clearance conditions for the period April'19 - September'19 in respect of Noamundi Iron Mine, Tata Steel Ltd.

Dear Sir,

Kindly find attached herewith submitting the six monthly compliance report as on date in respect of the stipulated Environmental Clearance conditions of Noamundi Iron Mine, Tata Steel Ltd. for the period from **April'19 - September'19** as per EIA Notification, 2006. Also for the same period vide office memorandum no. Z-11013/57/2014-IA.II (M), dated 29.10.2014, is attached herewith as Annexure -1. The same has been mailed 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,

f: Tata Steel Limited

Head (Planning), OMQ

Encl. : As above

Copy to : The Chairman, Central Pollution Control Board, Southern 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. Dhurwa, Ranchi - 834004 (Jharkhand)
: The Regional Officer, JSPCB, MB/12, New Housing Colony, Adityapur, Jamshedpur – 831013 (Jharkhand)

TATA STEEL LIMITED

Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India
Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



Compliance

to

Environmental Clearance Conditions

of

Noamundi Iron Mine
M/s. Tata Steel Limited

For the period: April 2019 – September -2019

(EC Letter No. J-11015/104/2011-IA.II (M) 10/06/2013)





25th Nov., 2019



**ENVIRONMENTAL CLEARANCE
OF
NOAMUNDI IRON MINE OF TATA STEEL LIMITED**
(Apr 2019 to Sept 2019)


(MoEF & CC Letter No. J-11015/104/2011-IA.II (M), DATED: 10/06/2013)
**FOR PRODUCTION OF 10 MTPA (ROM) &
BENEFICIATION OF 18 MTPA (THROUGHPUT) OF IRON ORE**

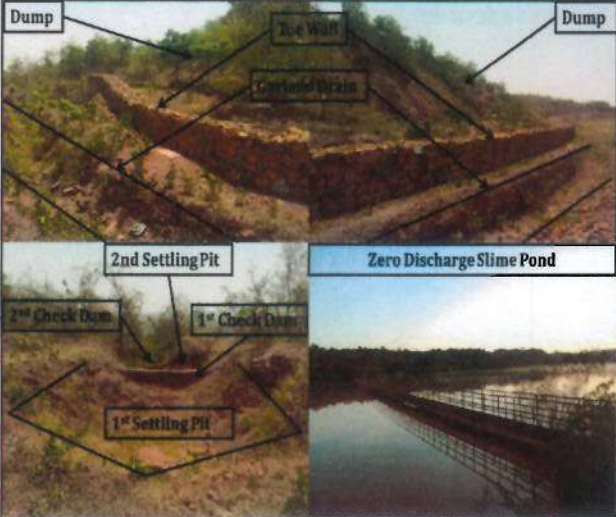


Sl. No.	EC Conditions	Compliance
<i>Specific Conditions</i>		
1.	No mining activities will be allowed in forest area for which the Forest Clearance is not available.	Being complied with. Noamundi Iron Mine of TATA Steel has 1160.06 ha lease area, out of which 762.43 ha is a forest land & rest is non-forest. Out of 762.43 ha, forest land diverted for mining is 370.92 ha vide letter no. 8-279, 1985 FC (Pt) dated 4 th Sept., 2014 & for rest 383.37 ha including safety zone of 8.14 ha, forest diversion proposal has already been applied & at advanced stage of clearance.
2.	The project proponent will seek and obtain approval under the FC Act, 1980 for diversion of the entire forest land located within the mining lease within a period of two years from 01.02.2013 i.e. the date of issue of guidelines by FC vide there letter F. No. 11-362/ 2012-FC, failing which the mining lease area will be reduced to the non-forest area plus the forest area for which the project proponent has been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, the project proponent will need to get a revised mining plan approved from the competent authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.	New Guidelines for Forest Diversion Proposal by FC vide letter F. No. 11-599/2014-FC dated: 01.04.2015 has been issued by MoEF&CC regarding this matter which suppressed the previous guidelines issued vide letter F. No. 11-362/2012-FC dated: 01.02.2013. None of the forest land has been reduced. The mine has already obtained Forest Clearance for 370.92 ha and for balance forest land 383.37 ha forest diversion already applied and is well advance stage before MoEF&CC Govt of India of clearance as per law. Noamundi mine lease is extended as per the amendment of MMDR Act on 2015 till 31.03.2030 and the mine plan is already approved till 31.03.2022 by Indian Bureau of Mines, Govt. of India.
3.	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Competent authority, as may be applicable to this project.	Not applicable. As no specific clearance under the Wildlife (Protection) Act, 1972 is required for the project. However, we have submitted details of Protection & Conservation of Wild Life measures to MoEF&CC good office vide our letter No. MD/ENV/204/101/15 dated: 20.04.2015.


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4.	<p>Prior environmental clearance from the Standing Committee of the National Board for Wildlife shall be obtained if applicable, due to location of the mine within the core zone of Singhbhum Elephant Reserve, before starting any activity relating to the project at site. All the conditions stipulated by the Standing Committee shall be effectively implemented in the project. It shall be noted that this clearance does not necessarily imply that wildlife clearance shall be granted to the project and that your proposal for wildlife clearance shall be considered by the competent authorities on its merit and decision taken. The investment made in the project, if any based on environmental clearance granted to the project, in anticipation of the clearance from wildlife clearance shall be entirely at the cost and risk of the project proponent and ministry of Environment & Forests shall not be responsible in this regard in any manner.</p>	<p>Not applicable.</p> <p>Prior Environmental Clearance is not required from the Standing Committee of the National Board for Wildlife as per letter no. Vanya Prani-19/2012/1310, dated. 19.03.2013 of State Govt.</p>
5.	<p>The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Jharkhand and effectively implement all the conditions stipulated therein.</p>	<p>Being complied with.</p> <p>Consent to Establish has been obtained from the Jharkhand State Pollution Control Board vide letter no. PC/NOC/JSR/26/12/B-1848, dated: 09.06.2015. Consent to Operate has also been obtained from State Pollution Control Board, Jharkhand vide letter No. JSPCB/HO/RNC/CTO-1162982 /2017/ 779, dated: 13.06.2017, which is valid till 31.12.2020. All the conditions are being effectively implemented & complied. The compliance report is also regularly been submitted to JSPCB.</p>
6.	<p>Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.</p>	<p>Noted down.</p> <p>However, there is no National Park, Sanctuaries, Elephant corridor and tiger reserves within 10 Km radius of the core zone.</p>
7.	<p>As part of Ambient Air Quality Monitoring during operational phase of the project, the air samples shall also be analysed for their mineralogical composition and records maintained.</p>	<p>Being Complied with.</p> <p>As a part of regular Ambient Air Quality Monitoring, mineralogical composition of air samples are being analysed on monthly basis and submitted to regulatory agency. All the records are adequately maintained. The mineralogical composition report of ambient air for last six months is attached herewith (annexure-1).</p>


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8.	The beneficiated ore shall be transported to railway sidings only through closed conveyor.	<p>Being Complied with.</p> <p>The beneficiated ore from processing plant is being transported to railway siding for transportation through covered conveyors.</p>  <p><i>Closed conveyor used in mineral transport</i></p>
9.	Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard	<p>Being complied with.</p> <p>The effective safeguard measures such as conditioning of ore before transportation by wet process is regularly being done. Fixed and mobile water sprinklers are installed and used in the area. Regular water sprinkling is also being done on the haul roads. Mist sprays are also installed in the area along in high dust generated areas. Fog based dust separators also installed and used.</p>  <p><i>Mobile & Fixed water sprinklers in Noamundi mines</i></p> <p>New 50KL water tanker with spray mist are installed in mines for effective dust control.</p> <p>Apart from above, the area is adequately covered with mass plantation. Thus dust generation has been controlled and eliminated.</p>  <p><i>Mist type dust suppression measures</i></p>  <p><i>Water jet with mist water spray in Noamundi</i></p>



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10.	<p>The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.</p>	<p>The rain water collected in the mine pits and allowed to be collected in the lowest level sumps to augment the ground water resources gradually. Rain water harvesting ponds and ground water recharge structures have been constructed and approved by the Ground Water Directorate, Jharkhand, Ranchi.</p>  <p><i>RWH structure for ground water augmentation in the area</i></p> <p>The unit has rain water harvesting approval from Hon. Director, Ground Water Directorate, Water Resources Dept. Jharkhand vide letter no. GWD 317/Ranchi, dated 14th Jun, 2012. At Noamundi area the various RWH structures in the form of Check Dams, Saucer ponds, Gabion Structures, Trenches and contour are made based on recommendation in available area.</p>  <p><i>RWH structure for ground water augmentation in the area</i></p> <p>To augment the ground water of surrounding villages, about 08 new ponds are been constructed in year 2018-19 around Noamundi mine lease for ground water augmentations details are attached as annexure-II.</p>
11.	<p>Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office</p>	<p>Ground water quality and Ground water level are being monitored periodically in and around the lease areas. All the monitoring results are being submitted to regulatory agencies. At five locations, new piezometers are installed in this year. The monitoring details are attached as annexure-II.</p>
12.	<p>The mining operations shall be restricted to</p>	<p>Being complied with.</p>

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	above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment and Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.	The mining operations are being restricted to above the ground water table. However, in case of working below ground water table prior approval for CGWA shall be taken. For ground water withdrawal of 500m ³ /day water for domestic purpose an application is been made by unit.
13.	The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. The Balijore Nallah shall be left undisturbed and protected.	Being complied with
14.	The project proponent shall regularly monitor the flow rate of the Balijore Nallah flowing through the mine lease and maintain the records.	Being complied with. We are regularly monitoring the flow rate of the Balijore Nallah and the report is being sent to the JSPCB, Ranchi every month. Details of flow rate of Balijhor Nallah for last six months are attached as annexure-III.
15.	There shall be no external over burden dumps at the end of the mine life. The reclaimed and rehabilitated area shall be afforested. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.	<p>Being complied. There shall not be any external over burden dumps at the end of mine life. The Over Burden (OB) is being dumped as per plan and within the earmarked area. Inactive portions of the OB dump are gradually stabilized and reclaimed by plantation & native species plantation.</p> <p>In this year the slime (waste material after beneficiation) is recovered from Noamundi slime pond and stored in the dump form for future use. The same slime dump area has been stabilized by using jute mat with grass plantation over area completely.</p>  <p><i>Jute matting & local grass plantation over slime dump</i></p>


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Specific Conditions		
16.	<p>Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, mineral and temporary OB dump(s) to prevent run off of water and flow of sediments directly into Balijore Nallah, Kundra Nallah, Jojo Nallah, Mahadev Nallah, Baitarni River and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de-silted particularly after monsoon and maintained properly. Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into Balijore Nallah, Kundra Nallah, Jojo Nallah, Mahadev Nallah, Baitarni River and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.</p>	<p>Garland drains with settling pits have been constructed all along the OB dumps. Check dams have also been provided for the settling of siltation. The de-siltation of these check dams are done regularly and properly maintained. Sedimentation pits have been constructed at the corners of the garland drains to take care of run off of water even during peak rain fall and they are being de-silted regularly before and after the monsoon. Garland drains, Settling tanks and Check dams had been constructed both around the mine pit and over burden dump(s).</p>  <p><i>Toewall, garland drain, settling tanks</i></p>
17.	<p>Dimension of the retaining wall at the toe of temporary over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.</p>	<p>Retaining wall and Garland drains of appropriate size have been constructed around the OB dumps to check mine run-off.</p>  <p><i>Toewall & garland drain in OB dumps</i></p>
18.	<p>Plantation shall be raised in an area of 990.601ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around the higher benches of excavated void to be converted in to water body, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.</p>	<p>In the year FY19 the plantation of about 6102 saplings is done in an additional area of mine. In addition to above a patch of local grass 450sq feet has been made in area.</p>  <p><i>Planation in Noamundi Mines</i></p>

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19.	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	<p>Being complied with. Fixed and mobile water sprinklers are installed and used in the area. Regular water sprinkling is also being done on the haul roads. Mist sprays are also installed in the area along in high dust generated areas such as loading unloading area. Fog based dust separators also installed at crushers and used along with dust extraction system.</p>  <p style="text-align: center;"><i>Other dust control measures in area</i></p>
20.	Mine water discharge and/or any waste water shall be properly treated to meet the prescribed standards before reuse/discharge. The run off from temporary OB dumps and other surface run off shall be analysed for iron and in case its concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.	<p>There is no waste water discharge from the mine and mineral processing plant, entire unit is "Zero Discharge Unit".</p> <p>After mineral processing (wet plant) the water is collected in slime pond, where decanted water from the slime dam is completely recycled & reused to the beneficiation plant and slime is recovered and stored for future use. Thus no water is being discharged to environment.</p>
21.	The decanted water from the beneficiation plant and slime/tailing pond shall be re-circulated within the mine and there shall be zero discharge from the mine.	Being complied with
22.	Regular monitoring of the flow rate of the springs and perennial nallahs shall be carried out and records maintained.	Being regularly complied with Details are attached as annexure-III.
23.	Regular monitoring of water quality upstream and downstream of Balijore Nallah, Kundra Nallah, Jojo Nallah, Mahadev Nallah shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	Water quality monitoring of Balijore Nallah, Kundra Nallah, Jojo Nallah, Mahadev Nallah, are being carried out and record of monitoring data maintained. The results, so obtained are sent to Regional office, MoEF&CC, Jharkhand State Pollution Control Board, Ranchi and Central Pollution Control Board. Water Quality Analysis is attached as annexure-IV.
24.	Appropriate mitigate measures shall be taken to prevent pollution of Baitarni River, if any, in consultation with the State Pollution Control	Baitarani River is flowing at a distance of about 12 Km from the mine and is not being polluted because of mining operations of Noamundi Iron

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Specific Conditions		
	Board.	Mine. However, different mitigation measures are being implemented for betterment of environment in and around the mine in consultation with the Jharkhand State Pollution Control Board.
25.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water for the project. Ground water shall not be used for the mining operations.	Being complied with. Only Surface water from Baitarani is being used for mining and processing purpose. At present, we have permission for drawl of 9786 KLD of surface water and our operation is being managed well within that quantity. Apart from this, we are recycling our slime dam water to meet basic water requirement of wet plant up to some extent. However, for increased requirement, we have applied for drawl of additional quantity of water to the regulatory agency.
26.	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.	<p>Being complied with. Three rain water harvesting ponds and several ground water recharge structures have been constructed at the mine site hiring the expertise of KRG Foundation, Chennai and they are now operational.</p> <p>Technical approval for design and Plan of Rain Water Harvesting (RWH) for Ground Water Recharge has already been approved by Hon. Director, Ground Water Directorate, Water Resources Dept. Jharkhand vide letter no. GWD 317/Ranchi, dated 14th Jun, 2012.</p> <p>At Noamundi area the various RWH structures in the form of Check Dams, Saucer ponds, Gabion Structures, Trenches and contour are made based on recommendation of Hon. Director, Ground Water Directorate, Water Resources Dept. Jharkhand and available land in the area.</p>  <p><i>RWH structure for ground water augmentation in the area</i></p>
27.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	Being complied with.
28.	Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for	Being complied with. Blasting is carried out only during day time. Controlled blasting is practiced with delay detonators for control of ground

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	control of ground vibrations and to arrest fly rocks and boulders should be implemented.	vibrations and to arrest fly rocks. Scientific studies are also being conducted from reputed agencies such as CIMFR, Dhanbad and all the recommendations followed for control of ground vibrations and fly rocks & boulders.
29.	Drills shall either be operated with dust extractors or equipped with water injection system.	Being complied with. All the drill are wet operated only.
30.	Mineral handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Being complied with. De-dusting unit are installed at crushing plant & is being regularly monitored. The last report is attached in annexure-V.  <i>Dust Extraction system at crusher Noamundi</i>
31.	Consent to operate shall be obtained from State Pollution Control Board prior to start of enhanced production from the mine.	Noamundi has valid consent to operate from Jharkhand State Pollution Control Board, which is valid till 31 st Dec., 2020.
32.	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for workshop and wastewater generated during mining operation.	Being complied with. Two Sewage Treatment Plant (STP) of 50 KLD & 10 KLD and an Effluent Treatment Plant (ETP) of 10 KLD are already installed & working smoothly in colony area of Noamundi. In the last year Fy-18; two additional treatment plants, one more STP of 50KLD in colony area & additional 10 KLD ETP for canteen in Bottom bin area are made.  <i>Sewage & Effluent Treatment Plant at Noamundi</i> For the workshops and all other areas and oil trap is installed with collection system. The entire

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		water is reused in other activities such as gardening & dust suppressions. No wastewater is being generated from mining operations.
33.	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment and Forests and its Regional Office, Bhubaneswar.	The digital processing of entire lease area is being carried out regularly. The current land use pattern is made by M/s Digital Cartography & Services Pvt. Ltd. the authorized agency by ORSAC, Bhubaneswar. The Resource SAT-II with multispectral bands LISS IV & Carto SAT -I with monochromatic band of year 2018 & 2017 respectively used based on clear vision. The land use land cover change map as on date is attached as annexure-VI.
34.	Regular monitoring of ambient air quality including free silica shall be carried out and records maintained.	Ambient air quality including free silica is regularly monitored and records maintained. All the monitoring details are attached as annexure-VII.
35.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Pre-placement medical examination and periodical examination of the workers engaged is being conducted & record maintained. The schedule of Periodical Medical Examination is once in every 3 years for the employees of age more than 40 years and once in 5 years for the employees of age less than 45 years.
36.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna such as wolf, elephant, sloth bear, rhesus macaque etc. spotted in the core and buffer zone of the mine and contribute towards the cost of implementation of the plan and/or Regional Wildlife Management Plan for conservation of flora and fauna so prepared by the State Forest and Wildlife Department. The amount so contributed shall be included in the project cost. A copy of action plan shall be submitted to the Ministry and its Regional Office, Bhubaneswar within 3 months.	Tata Steel is taking all the precautionary measures towards conservation and protection of endangered flora and fauna. As per the demand of DFO, South Division, Chaibasa, within whose jurisdiction Noamundi Iron mine falls, the Steel Company has deposited Rs. 59,85,000/- towards implementation of the wildlife management plan in order to protect them within our mine and its periphery. Further, Company has submitted an undertaking to bear the proportionate cost towards the execution of comprehensive Wildlife Management plan in the area to be prepared by the state Govt. As required, a site specific wild life conservation plan has also been submitted to the Ministry and its Regional Office, Bhubaneswar vide letter No. MD/ENV/ 409A/101/2011, dated: 21.10.2013.
37.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	A progressive mine closure plan approved by IBM is in place. The final mine closure plan along with details of Corpus fund will be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

General Conditions		
1.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Being complied with. We are operating as per the approved mining technology and scope of working mentioned in Environmental Clearance granted to us and No change in mining technology and scope of working shall be made and adhered to the condition of MoEF&CC.
2.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.	Being complied with. No change in calendar plan is made.
3.	At least four ambient air quality-monitoring should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM10) and NOX monitoring. Location of the stations should be decided based on the meteorological data, topographical features and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board /Central Pollution Control Board once in six months.	<p>Ambient Air Quality monitoring is being regularly carried out at four different stations within the core zone and Buffer zone respectively, which were located in consultation with the visiting officers of State Pollution control Board, Jharkhand and reports are being submitted to Regional office, MoEF&CC, Ranchi half yearly and to JSPCB monthly. Ambient Air Quality report is attached as Annexure-VIII.</p> <p>Apart from above three numbers of continuous online ambient quality stations (CAAQMS) are also installed in the core buffer area of mine Various parameters such as PM₁₀, PM_{2.5}, SO_x, NO_x is being monitored for every 15 minutes and the date of same is continuously uploaded in Pollution Control Board server. The data is same is also been displayed using electronic display board in public domain.</p>  <p style="text-align: center;"><i>CAAQMS station of Noamundi</i></p>
4.	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM etc. should be provided with ear plugs / muffs.	Adequate measures are being taken care. All the machines of high noise generated are covered with acoustic enclosure, in separate closed room. Noise generation is eliminated at source by regular maintenance of machines and proper enclosures. Apart from above for adequate PPE is also provided to all persons working in the area. All HEMM operator's cabins are made of soundproofs with air conditioning system. Noise monitoring of area is regularly being done the data of same is attached as Annexure-IX.

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5.	There will be zero waste water discharge from the plant.	Being complied. No water is being discharged from plant. Entire process water is recycled and reused. The High Rate Thickener is installed for rapid recovery of water from system in place of conventional thickeners.
6.	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.	Adequate dust masks are provided to employees engaged in dusty areas. The employees are also given regular awareness training on safety and health aspects as part of implementation process of OHSAS- 18001 & SA 8000 systems.
7.	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Periodical Medical Examination of employees and contractor workers are organized regularly to observe any contractions due to exposure to dust and other occupational hazards.
8.	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 Organization.	Complied with. A separate environmental management cell is in place with the people having relevant qualification on environmental science.
9.	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 the Ministry and its Regional Office located at Bhubaneswar.	Funds allocated for environmental management are spent only for environment related purposes and not diverted to any other purpose. Expenditure details of environmental protection measures during 2018-19 at Noamundi Iron Mine are attached as annexure-X.
10.	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Not applicable. Noamundi is an operational Iron mine of TATA Steel Ltd from last several decades. Thus financial closure & it's approval is not applicable.
11.	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.	Being complied with. We extend full co-operation to the officers of the Regional Office during their visit and furnish the required data, information and monitoring reports.
12.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State	Complied with. Six monthly compliance reports are being submitted regularly on the status of implementation of the stipulated environmental safeguards to the MoEF&CC, its Regional Office Ranchi, Central Pollution Control Board Kolkata and State Pollution Control Board Jharkhand. Further, the six-monthly

Sl. No.	EC Conditions	Compliance
<i>Specific Conditions</i>		
	Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	compliance reports along with the monitoring results is being uploaded on Tata Steel's website www.tatasteelindia.com and updated periodically.
13.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied with
14.	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	Complied with
15.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by email	The environmental statement for financial year 2018-19 has been submitted to the State Pollution Control Board on vide letter no. MD/ENV/351/125/2019, dated: 25.09.2019 and the same has been hosted on Company's website www.tatasteelindia.com . Further, compliance status on environmental clearance conditions was also sent to the Regional Office of the Ministry of Environment and Forests, Ranchi by e-mail.
16.	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue 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 also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Details of Environment Clearance with regard to Noamundi Iron Mine were published both in English and Hindi in local newspapers named "The Hindustan Times" and "Dainik Jagran" respectively on 15th June, 2013. The copy of the newspaper advertisement was sent to the Regional Office, MoEF, Bhubaneswar vide our letter no. MD/ENV/245A/101/ 2013, dated. 19th June'2013, same is attached as Annexure-XI.

Mineralogical Composition

Noamundi Iron Mine

(Apr'19 - Sep'19)

Month	Silica (%)	FeO (%)	CaO (%)	Al ₂ O ₃ (%)
Apr-19	0.82	0.066	0.081	<0.01
May -19	0.44	0.51	0.039	<0.01
Jun -19	0.51	0.56	0.044	<0.01
Jul-19	0.48	0.52	0.041	<0.01
Aug -19	0.36	0.42	0.031	<0.01
Sep -19	0.36	0.42	0.031	<0.01

Lab in Charge

Mineralogical Composition Analysis Report

(Apr'19 - Sep'19)

Noamundi Iron Mine



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Format No.: 7.8.2/FMT/TR/06

TEST REPORT

(MINERALOGICAL COMPOSITION ANALYSIS REPORT - APRIL-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	Env/lab/19/R-268	Report Release Date	04/05/19
Sample Code	A-1	Sampled By	VCSPL Representative
Sample Name	Mineralogical Composition	Sampled On	07.04.2019
Sample Condition	Scaled	Sampling Location	A-1: Near Mines Area
Test Started On	08.04.2019	Sample Received On	08.04.2019
		Test Completed On	09.04.2019

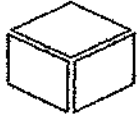
Monitoring Date	Parameters	Analysis Results
		A-1
07.04.2019	*Silica(%)	0.82
	*FeO (%)	0.066
	*CaO (%)	0.081
	*Al ₂ O ₃ (%)	<0.01

Note Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received.
2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method.
3. The test report shall not be reproduced, without written approval of laboratory.



Mineralogical Composition Analysis Report



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TEST REPORT (MINERALOGICAL COMPOSITION ANALYSIS REPORT - MAY-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	ENV/96/19/R-0695	Report Release Date	03.06.19
Sample Code	A-1	Sampled By	VCSPL Representative
Sample Name	Mineralogical Composition	Sampled On	07.05.2019
Sample Condition	Sealed	Sampling Location	A-1: Near Mines Area
Test Started On	08.05.2019	Sample Received On	08.05.2019
		Test Completed On	10.05.2019

Monitoring Date	Parameters	Analysis Results
		A-1
07.05.2019	*Silica(%)	0.44
	*FeO (%)	0.51
	*CaO (%)	0.039
	*Al ₂ O ₃ (%)	<0.01

Note Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received.
2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method.
3. The test report shall not be reproduced, without written approval of laboratory.

Authorized Signatory

Mineralogical Composition Analysis Report



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Format No.: 7.8.2/FMI/TR/06

TEST REPORT

(MINERALOGICAL COMPOSITION ANALYSIS REPORT - JUNE-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	Env/08/19/R-1096	Report Release Date	08/07/19
Sample Code	A-1	Sampled By	VC SPL Representative
Sample Name	Mineralogical Composition	Sampled On	03.06.2019
Sample Condition	Sealed	Sampling Location	A-1: Near Mines Area
Test Started On	04.06.2019	Sample Received On	04.06.2019
		Test Completed On	08.06.2019

Monitoring Date	Parameters	Analysis Results
		A-1
03.06.2019	*Silica(%)	0.51
	*FeO (%)	0.56
	*CaO (%)	0.044
	*Al ₂ O ₃ (%)	<0.01

Note Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received.
2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method.
3. The test report shall not be reproduced, without written approval of laboratory.

Authorized Signatory

Annexure II

**Special Condition no. (xi) of EC vide no. J-11015/104/2011-IA.II (M), dated 10th June, 2013
Noamundi Iron Mine, TATA Steel Ltd.**

Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring (at least four times in a year - pre-monsoon (April- May), monsoon (August), post – monsoon (November) and winter (January); once in each season) shall be carried out in consultation with the State Ground Water Board / Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to mining activity, necessary corrective measures shall be carried out.

Noamundi Iron Mine of TATA Steel Ltd. is an operational opencast captive iron mine. Regular monitoring of ground water level in and around the mine lease of existing well is regularly been done in desired frequency. The detailed quality report is attached herewith.

As per recent hydro-geological study & regulatory approval, few additional locations are also incorporated along with proposed piezometers in the area. Monitored water level for of area for the month of May 2019 and August 2019 are as follows:

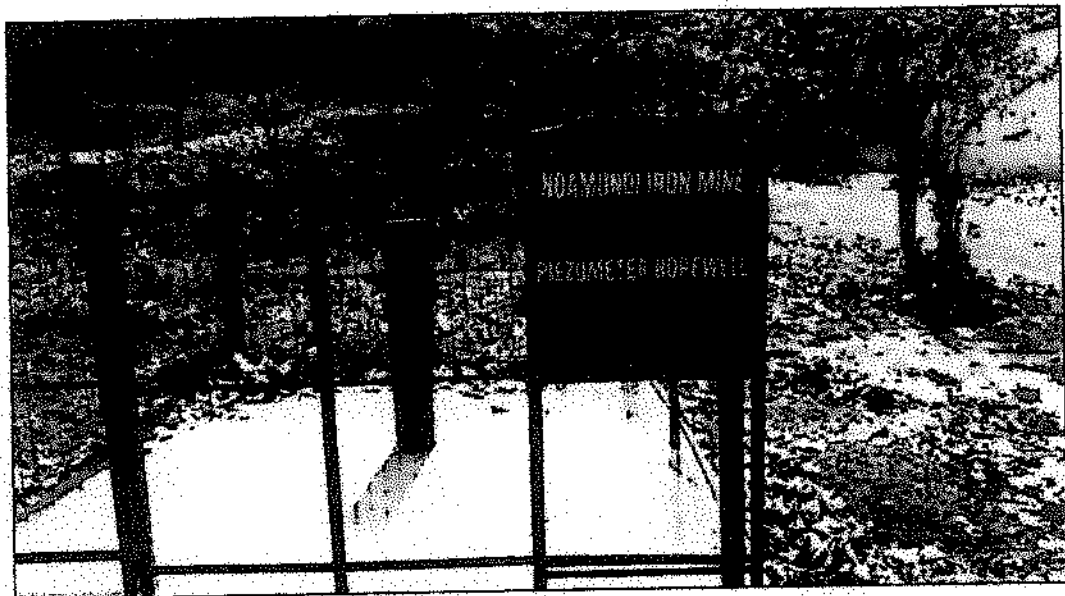
Sl. No.	LOCATION	MONTH		Remarks
		May, 2019	August, 2019	
Dug Well Locations:				
1.	Mohudi Railway Station, Kash Moudi Inside Home	2m 96cm	1m 28 cm	Quality Report attached as Annexure-II
2.	Noamundi Basti, Near Football field	6m 28 cm	4m 14cm	
3	Near Plant Site, Infront Bottom Bin back Gate	3m 25 cm	2m 10 cm	
4.	Noamundi Bazar (In front of Petrol pump)	3m 92 cm	2m 42 cm	
5.	Serbil	5m 45cm	1m 24cm	
6.	Mohudi village exit	1m 59 cm	1m 19cm	
7.	Mohudi village near road	5m 42cm	1m 22 cm	
8.	Kash Mohudi Railway Station (Near road)	1m 51cm	1m 21 cm	
9.	Natho Sahi (near pond)	2m 11cm	1m 48 cm	
10.	Natho Sahi (on the road to Matia home)	1 m 45 cm	1m 18 cm	
11	Noamundi Basti (inside house)	2 m 45 cm	1m 24 cm	
12.	Noamundi Basti (near pond)	1 m 62 cm	1m	

Sl. No.	LOCATION	MONTH		Remarks
		May, 2019	August, 2019	
13.	Natho Sahi (near Rain water harvesting)	1m 12cm	0.74m	
14.	College road	2m 22cm	1m 18cm	
15.	Lakhansahi (Near Manish House) – new site	10m 86 cm	7m 25cm	
Newly constructed Piezometer Locations				
16.	New Township, Near DAV School, Noamundi	22m 85 cm	19m 57cm	
17.	New Township, Near Aqua Park, Noamundi	25 m	23.5 m	
19	Bottom Bin near security Barrack	7m 22cm	2m 15cm	
20	Bottom bin near well	1.5 m	0.96 m	
21	Bore well near power house	19m 5cm	16m 20cm	

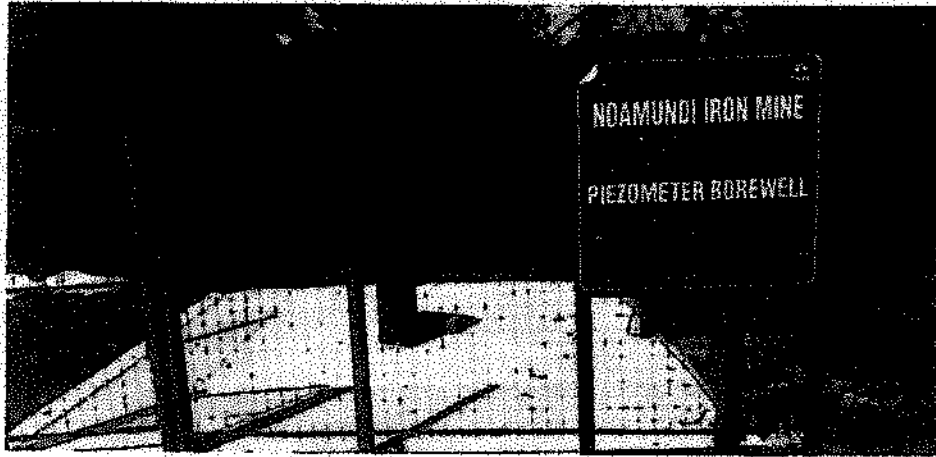
**Newly constructed Piezometer Locations
at
Noamundi Iron Mine, TATA Steel Ltd.**



Piezometric borewell installed at Aqua Park, Noamundi Mine



Piezometric borewell installed at New township, Noamundi Mine



Piezometric borewell installed at Power house (Hill 1 & 2) site, Noamundi Mine



Piezometric borewell installed at Bottom Bin (Railway loading site) area, Noamundi Mine

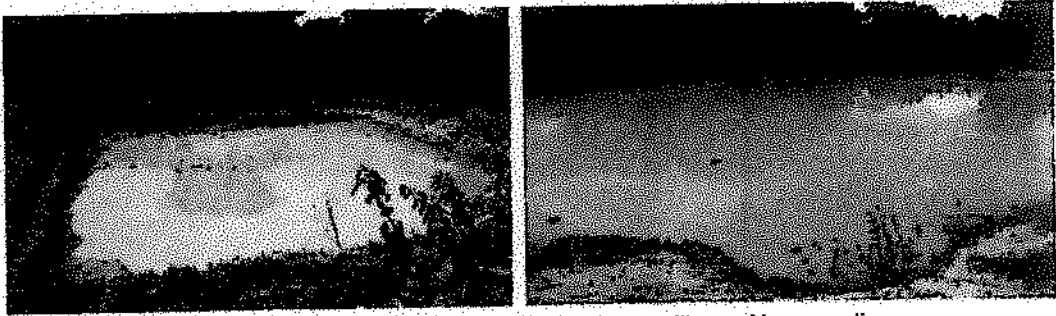


Piezometric borewell at Jojo Camp & Security Barrack with monitoring, Noamundi Mine

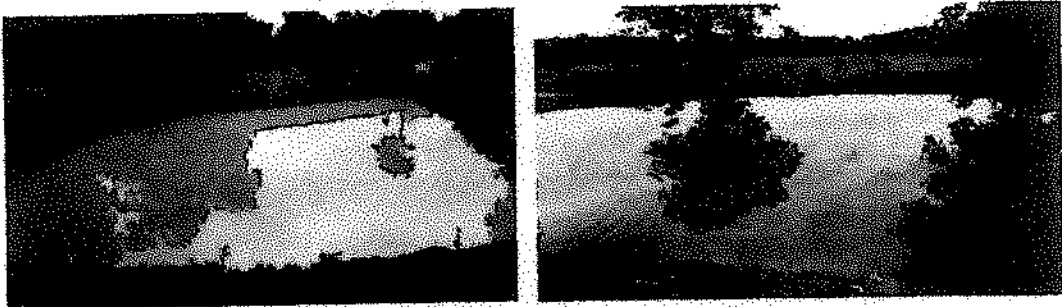
Rain Water Harvesting Structure Developed Noamundi Iron Mine, Tata Steel Ltd

In the year 2018-19, total 08 ponds of various sizes are made in and around Noamundi area in villages. The details are as follows:

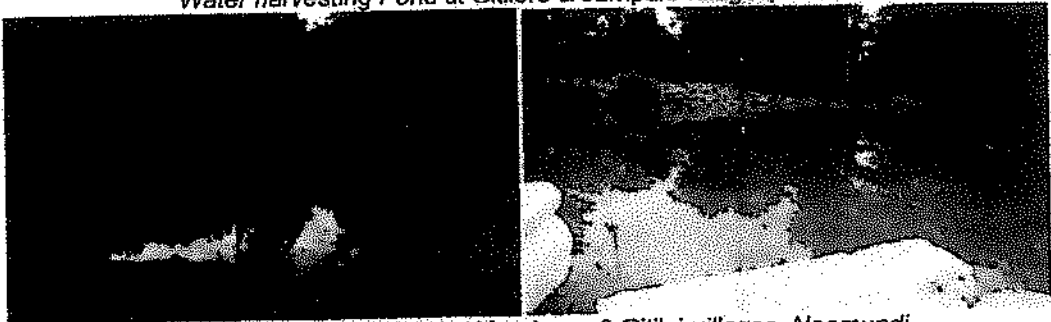
Sl No.	Name of pond owner	Village	Size	Depth (avg)	Area (m ³)
1.	Sukram Balmuchu	Pada Pahar	33 m X 29 m	3 m	2871
2.	Shambhu Ch. Balmuchu	Pada Pahar	40 m X 26 m	3 m	3120
3.	Gade Hemram	Gitilore	26.50 m X 26.50 m	3 m	2106.75
4.	Laxman Purty	Jampani	22 m X 25 m	3 m	1650
5.	Jairam Barjo	Meralgara	30 m X 29 m	3 m	2610
6.	Baira Hemram	Gitilore	29.50 m X 24 m	3 m	2124
7.	Ashlnath Chetar	Gitilpi	25 m X 22 m	3 m	1650
8.	Charan Balmuchu	Pada Pahar	22 m X 22m	3 m	1452



Water harvesting Pond at Pada Pahar village, Noamundi



Water harvesting Pond at Gitilore & Jampani villages, Noamundi



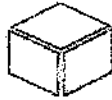
Water harvesting Pond at Meralgara & Gitilpi villages, Noamundi



Water harvesting Pond at Sarbil village, Noamundi

1. Total Storage capacity of recharge = 17583.75m^3 .
2. Rainfall during monsoon = 1354mm.
3. No of rainy days: 63
4. Average rainfall per day: 21mm
5. It is presumed that after every 30 rainy days pond will be filled with harvester rain water, and further water will remain for another 30 days. Thus number of filling will be 3 in a term of 63 days as rain days and additional 30 days of collected rain water as storage.
6. Thus storage capacity of water tank will be $17583.75 \times 3 = 52751.25\text{ m}^3$.

Water storage capacity made in the year 2018-19 is 52751.25m^3 at surrounding villages of Noamundi Iron Mine.


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NABL Accredited

Certificate No. 14-7944

Format No. VCS/CM/CR/20

TEST REPORT
(GROUND WATER QUALITY ANALYSIS REPORT- MAY-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	Enyja.b.191R-0403	Report Release Date	03.06.19
Sample Code	GW-1, GW-2	Sampled By	VCSPL Representative
Sample Name	Ground Water	Sampled On	19.05.2019
Sample Condition	Sealed	Sampling Location	GW-1: Noamundi Basin GW-2: Noamundi Basin Near Pencil Pump
Test Started On	20.05.2019	Sample Received On	20.05.2019
		Test Completed On	27.05.2019

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS:14500, 2012	Analysis Results	
					GW-1	GW-2
Essential Characteristics						
1	*Colour	APHA 2120 B.C	Maxon	5	CL	CL
2	*Odour	APHA 2130 B	--	Agreeable	Agreeable	Agreeable
3	*Taste	APHA 2160 C	--	Agreeable	Agreeable	Agreeable
4	Turbidity	APHA 2130 B	NTU	1	<1	<1
5	pH Value	APHA 4500H ⁺ B	--	6.5-8.5	7.24	7.34
6	Total Hardness (as CaCO ₃)	APHA 2340 C	mg/l	300	144.0	146.0
7	Iron (as Fe)	APHA 3113 B	mg/l	0.3	0.31	0.18
8	Chloride (as Cl ⁻)	APHA 4500Cl ⁻ B	mg/l	250	21.4	28.0
9	*Residual, Free Chlorine	APHA 4500Cl ⁻ H	mg/l	4.2	ND	ND
Desirable Characteristics						
10	Dissolved Solids	APHA 2540 C	mg/l	500	206.0	225.0
11	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	34.2	40.2
12	Magnesium (as Mg)	APHA 3800Mg B	mg/l	30	14.2	14.2
13	Copper (as Cu)	APHA 3111 Cu B	mg/l	0.05	<0.05	<0.05
14	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.018	0.025
15	*Sulphate (as SO ₄)	APHA 4500 SO ₄ ²⁻ E	mg/l	200	4.4	5.8
16	*Nitrate (as NO ₃)	APHA 4500 NO ₃ ⁻ F	mg/l	45	3.9	1.2
17	*Fluoride (as F)	APHA 4500F ⁻ C	mg/l	1	0.021	0.041
18	*Phenolic Compounds (as C ₆ H ₅ OH)	APHA 6530 B.D	mg/l	0.001	<0.001	<0.001
19	Mercury (as Hg)	APHA 3112 B	mg/l	0.001	<0.001	<0.001
20	Cadmium (as Cd)	APHA 3113 B	mg/l	0.001	<0.001	<0.001
21	*Selenium (as Se)	APHA 3114 B	mg/l	0.01	<0.001	<0.001
22	*Arsenic (as As)	APHA 3114 B	mg/l	0.01	<0.001	<0.001
23	*Cyanide (as CN)	APHA 4500 CN ⁻ C.D	mg/l	0.05	ND	ND
24	Lead (as Pb)	APHA 3111 B	mg/l	0.01	<0.001	<0.001
25	Zinc (as Zn)	APHA 3111 B	mg/l	5	<0.05	<0.05
26	*Anionic Detergent (as MBAS)	APHA 5540 C	mg/l	0.2	<0.2	<0.2
27	*Chromium (as Cr ⁶⁺)	APHA 3500Cr B	mg/l	--	<0.05	<0.05
28	*Mineral Oil	APHA 5520 B	mg/l	0.5	<0.01	<0.01
29	Alkalinity	APHA 2320 B	mg/l	300	178.0	124.0
30	*Aluminium (as Al)	APHA 3500Al B	mg/l	0.05	<0.001	<0.001
31	*Boron (as B)	APHA 4500B ⁻ B	mg/l	0.05	<0.01	<0.01
32	*Poly Aromatic Hydrocarbon (as PAH)	APHA 6440 B	µg/l	--	<0.001	<0.001
33	*Pesticide	APHA 6630 B.C	mg/l	Absent	Absent	Absent
34	*EColi	APHA 9221 E	MPN/100 ml	Should not be detectable in any 100 ml sample	Absent	Absent

Note: Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received. 2. Samples will be destroyed after 7 days from date of report of the test report subject to nature of preservation. Sample will be preserved as per standard method.





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Certificate No: TC-7943
Format No: VZ2 FMT TR-06

TEST REPORT

GROUND WATER QUALITY ANALYSIS REPORT- AUG-2019

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/TATA Steel Limited)		
Test Report No	ENVIR/ES/1918-5378	Report Release Date	03.09.19
Sample Code	GW-1, GW-2	Sampled By	VESEL Representative
Sample Name	Ground Water	Sampled On	12.08.2019
Sample Condition	Noted & for Preservation	Sampling Location	GW-1 Noamundi Plant GW-2 Noamundi Plant
Test Started On	14.08.2019	Sample Received On	13.08.2019
		Test Completed On	21.08.2019

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS-10380:2012		Analysis Results	
				Permissible Limit	Permissible Limit	GW-1	GW-2
General Characteristics							
1	pH Value	APHA201 Lab 2017 2020 H	None	5	14	6.5	6.5
2	Temperature	APHA201 Lab 2017 2020 H	None	Agreeable	Agreeable	Agreeable	Agreeable
3	Specific Gravity	APHA201 Lab 2017 2020 H	None	Agreeable	Agreeable	Agreeable	Agreeable
4	Total Solids	APHA201 Lab 2017 2020 H	mg/l	1	5	ND	ND
5	Total Suspended Solids	APHA201 Lab 2017 2020 H	mg/l	Agreeable	No relaxation	7.25	1.25
6	Total Dissolved Solids	APHA201 Lab 2017 2020 H	mg/l	500	600	113.2	116.6
7	Hardness (Total)	APHA201 Lab 2017 2020 H	mg/l	500	No relaxation	0.18	0.16
8	Hardness (Calcium)	APHA201 Lab 2017 2020 H	mg/l	250	1650	24.2	24.2
9	Hardness (Magnesium)	APHA201 Lab 2017 2020 H	mg/l	0.3	1	ND	ND
Dissolved Constituents							
10	Dissolved Silica	APHA201 Lab 2017 2020 H	mg/l	500	2000	198.2	192.2
11	Chloride (as Cl ⁻)	APHA201 Lab 2017 2020 H	mg/l	25	200	2.5	3.6
12	Sulfate (as SO ₄ ²⁻)	APHA201 Lab 2017 2020 H	mg/l	10	100	1.8	1.2
13	Calcium (as Ca ²⁺)	APHA201 Lab 2017 2020 H	mg/l	0.25	1.5	0.24	0.21
14	Magnesium (as Mg ²⁺)	APHA201 Lab 2017 2020 H	mg/l	0.1	0.2	0.012	0.01
15	Sodium (as Na ⁺)	APHA201 Lab 2017 2020 H	mg/l	200	300	3.2	1.1
16	Potassium (as K ⁺)	APHA201 Lab 2017 2020 H	mg/l	15	No relaxation	1.2	7.4
17	Fluoride (as F ⁻)	APHA201 Lab 2017 2020 H	mg/l	1	1.5	0.013	0.02
18	Iron (as Fe)	APHA201 Lab 2017 2020 H	mg/l	0.05	0.05	ND	ND
19	Copper (as Cu)	APHA201 Lab 2017 2020 H	mg/l	0.01	0.01	ND	ND
20	Zinc (as Zn)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
21	Nickel (as Ni)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
22	Lead (as Pb)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
23	Cadmium (as Cd)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
24	Chromium (as Cr)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
25	Mercury (as Hg)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
26	Manganese (as Mn)	APHA201 Lab 2017 2020 H	mg/l	5	15	0.14	0.02
27	Ammonia Nitrogen (as N)	APHA201 Lab 2017 2020 H	mg/l	0.2	1	ND	ND
28	Nitrate Nitrogen (as N)	APHA201 Lab 2017 2020 H	mg/l	0.5	10	ND	ND
29	Phosphate (as P)	APHA201 Lab 2017 2020 H	mg/l	0.5	No relaxation	ND	ND
30	Barium (as Ba)	APHA201 Lab 2017 2020 H	mg/l	100	100	1.27	1.27
31	Strontium (as Sr)	APHA201 Lab 2017 2020 H	mg/l	0.2	0.2	ND	ND
32	Cyanide (as C)	APHA201 Lab 2017 2020 H	mg/l	0.05	0.05	ND	ND
33	Hexachlorocyclopentadiene (as HCCCP)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
34	Heptachlorocyclopentadiene (as HCCCP)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
35	Endrin (as Endrin)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
36	DDT (as DDT)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
37	Chlordane (as Chlordane)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
38	Heptachlor Epoxide (as HCE)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
39	Alachlor (as Alachlor)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
40	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
41	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
42	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
43	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
44	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
45	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
46	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
47	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
48	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
49	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND
50	Carbofenthothion (as CF)	APHA201 Lab 2017 2020 H	mg/l	0.01	No relaxation	ND	ND

- Note: All the parameters are measured in mg/l unless stated otherwise. ND: Not Detected.
- The test values are reported based on the samples received.
 - Samples will be destroyed after 30 days from date of issues of the test report subject to nature of preservation. Sample should be stored in a cool, dry place.
 - The test report shall not be reproduced, without written approval of laboratory.

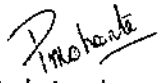


Flow Rate of Balijhor Nalla (Apr'19 - Sep'19)

ANALYSIS OF WATER QUALITY
Sample collected from Balijhore Nalla

Parameters	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
BOD mg/l	1.20	1.00	1.40	1.70	2.80	2.00
CPCB Limit (30 mg/l)						
TSS mg/l	10.00	9.60	14.90	48.30	68.20	39.90
CPCB Limit (100 mg/l)						
Flow Rate Cum/hr	8.94	8.94	26.63	155.06	478.84	91.58

There is no any industrial effluents discharge from the mine.


Lab-in-charge

Surface Water Analysis Report

(Apr'19 – Sep'19)

Noamundi Iron Mine



Visiontek Consultancy Services Pvt. Ltd.

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Certificate No.: TC-7944

Format No.: 7.8.2/FMT/TR/06

TEST REPORT

(SURFACE WATER QUALITY ANALYSIS REPORT- MAY-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	En/1ab/191R-0701	Report Release Date	03.06.19
Sample Code	SW-1, SW-2	Sampled By	VCSPIL Representative
Sample Name	Surface Water	Sampled On	20.05.2019
Sample Condition	Sealed	Sampling Location	SW-1: Balijharan Upstream SW-2: Balijharan Downstream
Test Started On	21.05.2019	Sample Received On	21.05.2019
		Test Completed On	27.05.2019

Sl. No	Parameter	Testing Methods	Unit	Standard as per IS:2296:1992 Class-C	Analysis Results	
					SW-1	SW-2
1	Dissolved Oxygen (minimum)	APHA 2540 C	Hazen	4	3.6	4.8
2	Total Suspended Solids as TSS	APHA 2540 D	--	--	40.0	46.0
3	BOD (3) days at 27°C (max)	APHA 5210 B	--	3	3.2	3.8
4	Chemical Oxygen Demand as COD	APHA 5220 C	NTU	--	28.0	34.0
5	*Total Coli form	APHA 9221 B	--	5000	220.0	280.0
6	pH Value	APHA 4500H B	mg/l	6.0-9.0	7.44	7.48
7	Colour (max)	APHA 2120 B,C	mg/l	300	1.0	2.0
8	Total Dissolved Solids	APHA 2540 C	mg/l	1500	146.0	152.0
9	Copper as Cu (max)	APHA 3111 B,C	mg/l	1.5	<0.05	<0.05
10	Iron as Fe (max)	APHA 3500 Fe B	mg/l	0.5	0.44	0.51
11	Chloride (max)	APHA 4500 ClB	mg/l	600	29.0	30.6
12	*Sulphates (SO ₄) (max)	APHA 4500 SO ₄ E	mg/l	400	4.2	4.8
13	*Nitrate as NO ₃ (max)	APHA 4500 NO ₃ E	mg/l	50	1.88	1.96
14	*Fluoride as F (max)	APHA 4500F C	mg/l	1.5	0.029	0.036
15	*Phenolic Compounds as C ₆ H ₅ OH (max)	APHA 5530 B,D	mg/l	0.005	<0.001	<0.001
16	Cadmium as Cd (max)	APHA 3111 B,C	mg/l	0.01	<0.001	<0.001
17	*Selenium as Se (max)	APHA 3114 B	mg/l	0.05	<0.001	<0.001
18	*Arsenic as As	APHA 3114 B	mg/l	0.2	<0.001	<0.001
19	*Cyanide as CN (max)	APHA 4500 CN C,D	mg/l	0.05	ND	ND
20	Lead as Pb(max)	APHA 3111 B,C	mg/l	0.1	<0.01	<0.01
21	Zinc as Zn(max)	APHA 3111 B,C	mg/l	15	<0.05	<0.05
22	*Hexa Chromium as Cr ⁶⁺	APHA 3500Cr B	mg/l	0.05	<0.05	<0.05
23	*Anionic Detergents (max)	APHA 5540 C	mg/l	1	<0.2	<0.2
24	Mercury as Hg	APHA 3500 Hg	mg/l	--	<0.001	<0.001
25	*Manganese as Mn	APHA 3500Mn B	mg/l	--	<0.05	<0.05

Note : CL: Colourless, ND: Not Detected

Note: Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received. 2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method.
3. The test report shall not be reproduced, without written approval of laboratory.

(Signature)
 Visiontek Consultancy Services Pvt. Ltd.
 Authorized Signatory

Surface Water Analysis Report



Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

(ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Certified)



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Certificate No.: TC-7944

Format No.: 7.8.2/FMT/TR06

TEST REPORT (SURFACE WATER QUALITY ANALYSIS REPORT- AUG-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/S TATA Steel Limited)		
Test Report No	Envtch/19/R-3406	Report Release Date	03.09.19
Sample Code	SW-1 TO SW-2	Sampled By	VCSP/ Representative
Sample Name	Surface Water	Sampled On	12.08.2019
Sample Condition	Sealed, Ice Preservative	Sampling Location	SW-1: Bahubaran Upstream SW-2: Bahubaran Downstream
Test Started On	13.08.2019	Sample Received On	13.08.2019
		Test Completed On	20.08.2019

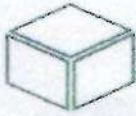
Sl. No	Parameter	Testing Method	Unit	Standards as per IS-2296:1992 Class-'C'	Analysis Results	
					SW-1	SW-2
1	Dissolved Oxygen (minimum)	APHA 23 ⁰⁰ Ed.2017:2017 2540 C	mg/l	4	4.8	5.2
2	Total Suspended Solids as TSS	APHA 25 ⁰⁰ Ed.2017:2017 2540 D	mg/l	--	412	50
3	BOD (3) days at 27°C (max)	IS 3020(1993) 1993 RA 2000	mg/l	3	3.6	4.1
4	Chemical Oxygen Demand as COD	APHA 23 ⁰⁰ Ed.2017: 8320 C	mg/l	--	32	36
5	Total Coli form	APHA 23 ⁰⁰ Ed.2017: 9221 B	MPN/100ML	5000	120	220
6	pH Value	APHA 23 ⁰⁰ Ed.2017:8500(F)+B	--	6.0-9.0	7.48	7.56
7	Colour (max)	APHA 23 ⁰⁰ Ed.2017: 2120 B, C	Hazen	300	41	1
8	Total Dissolved Solids	APHA 23 ⁰⁰ Ed.2017: 2540 C	mg/l	1500	142.0	156.0
9	Copper as Cu (max)	APHA 23 ⁰⁰ Ed.2017: 3111 B	mg/l	1.5	BDL	BDL
10	Iron as Fe (max)	APHA 23 ⁰⁰ Ed.2017: 3500(F)+B	mg/l	0.5	0.31	0.36
11	Chloride (max)	APHA 23 ⁰⁰ Ed.2017: 4500(C)-B	mg/l	600	31.8	36.0
12	Sulphates (SO ₄) (max)	APHA 23 ⁰⁰ Ed.2017: 4500 SO ₄ -E	mg/l	400	4.4	5.1
13	Nitrate as NO ₃ (max)	APHA 23 ⁰⁰ Ed.2017: 4500 NO ₃ -F	mg/l	50	1.92	2.12
14	Fluoride as F (max)	APHA 23 ⁰⁰ Ed.2017: 4500(F)-C	mg/l	1.5	0.021	0.028
15	Phenolic Compounds as C ₆ H ₅ OH (max)	APHA 23 ⁰⁰ Ed.2017: 8530 B,D	mg/l	0.005	BDL	BDL
16	Cadmium as Cd (max)	APHA 23 ⁰⁰ Ed.2017: 3111 B	mg/l	0.01	BDL	BDL
17	Selenium as Se (max)	APHA 23 ⁰⁰ Ed.2017: 8500 Se-C	mg/l	0.05	BDL	BDL
18	Arsenic as As	APHA 23 ⁰⁰ Ed.2017: 3114 B	mg/l	0.2	BDL	BDL
19	Cyanide as CN (max)	APHA 23 ⁰⁰ Ed.2017: 4500 CN-C,D	mg/l	0.05	ND	ND
20	Lead as Pb(max)	APHA 23 ⁰⁰ Ed.2017:3111 B	mg/l	0.1	BDL	BDL
21	Zinc as Zn(max)	APHA 23 ⁰⁰ Ed.2017: 3111 B	mg/l	15	BDL	BDL
22	Hexa Chromium as Cr ^{VI}	APHA 23 ⁰⁰ Ed.2017: 3500(F)+B	mg/l	0.05	BDL	BDL
23	Anionic Detergents (max)	APHA 23 ⁰⁰ Ed.2017: 5540 C	mg/l	1	BDL	BDL
24	Mercury as Hg	APHA 23 ⁰⁰ Ed.2017: 3112 B	mg/l	--	BDL	BDL
25	Manganese as Mn	APHA 23 ⁰⁰ Ed.2017: 3500(M)+B	mg/l	--	BDL	BDL

Note: Above (*) parameters are not in our NABL scope. Note: CL: Colorless, ND: Not Detected.
 BDL Below Detectable Limits Values: Cu: 0.02 mg/l, Mn: 0.05 mg/l, Cr^{VI}: 0.01 mg/l, Hg: 0.001 mg/l, Cd: 0.001 mg/l, Se: 0.001 mg/l, As: 0.01 mg/l, Zn: 0.05 mg/l, Pb: 0.01 mg/l, Cr: 0.01 mg/l, Ni: 0.01 mg/l, Fe: 0.01 mg/l.

- The test values are reported based on the samples received.
- Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Samples will be preserved per standard method.



Analysis Report – De-dusting Unit



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TEST REPORT (DUST FALL ANALYSIS REPORT- MAY-2019)

Customer Name & Address	M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)		
Test Report No	EnvLab/19/R-0707(4)	Report Release Date	03.06.19
Sample Code	DF-1	Sampled By	VC SPL Representative
Sample Name	Dust Fall	Sampled On	19.05.2019
Sample Condition	Sealed	Sampling Location	DF1: Mines Area
Test Started On	20.05.2019	Sample Received On	20.05.2019
		Test Completed On	22.05.2019

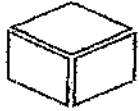
F-1	Monitoring Date	Analysis Result					
Parameters	19.05.2019	DF (t/km ² /month)	Ni(%)	Co (%)	Hg(%)	As (%)	Fe (%)
DF & M		2.8	0.092	0.061	<0.001	<0.001	1.46

Note: Above (*) parameters are not in our scope.

1. The test values are reported based on the samples received. 2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method.
3. The test report shall not be reproduced, without written approval of laboratory.



Analysis Report – De-dusting Unit



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Format No.: 5.82 FM/TR/06

TEST REPORT (DUSTFALL ANALYSIS ANALYSIS REPORT- AUG-2019)

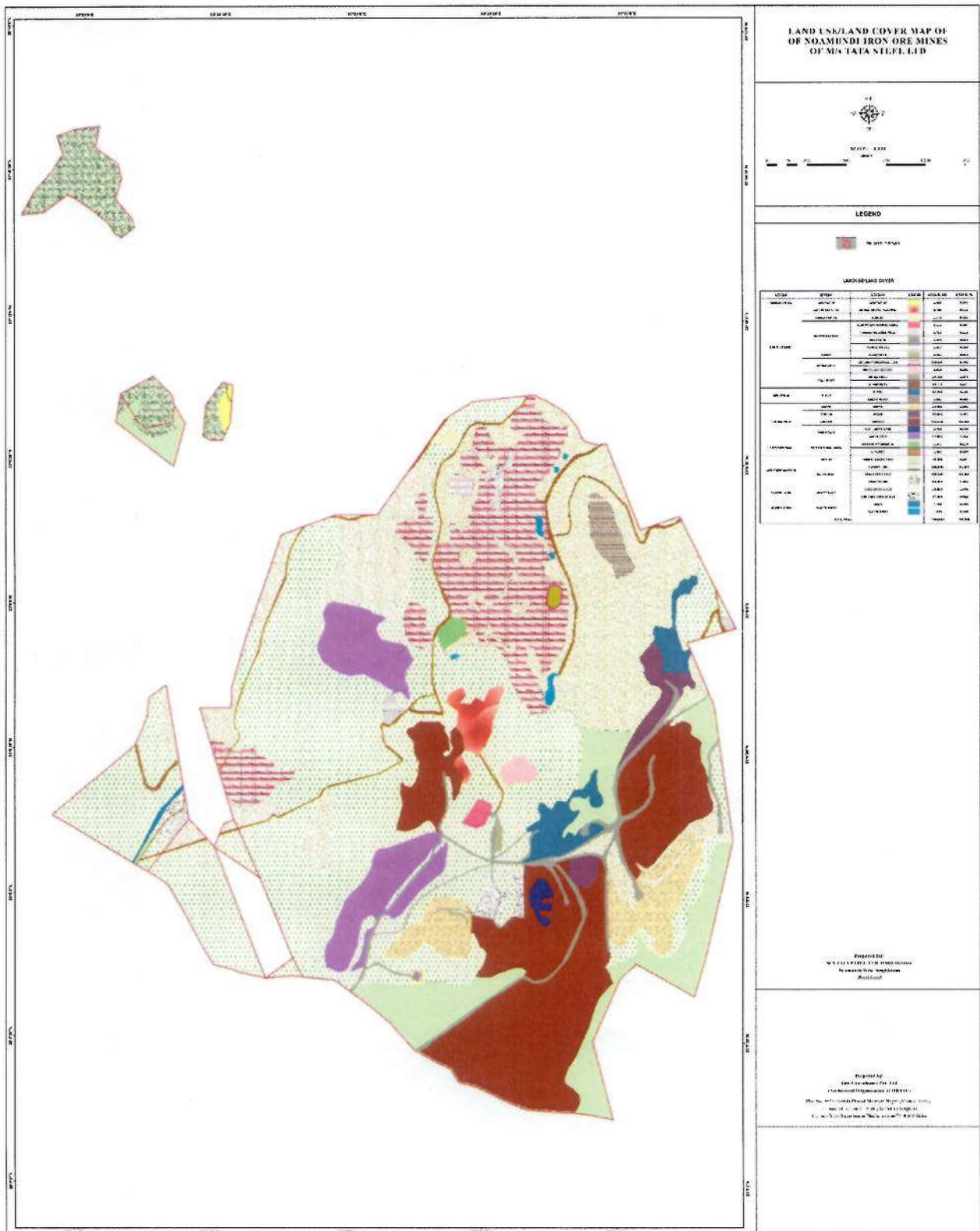
Customer Name & Address		M/S. NOAMUNDI IRON MINES (M/s TATA Steel Limited)	
Test Report No	Enj1a b/19 IR-3371	Report Release Date	03.09.19
Sample Code	DF-1	Sampled By	VCSPI Representative
Sample Name	Dust Fall	Sampled On	23 08 2019
Sample Condition	Sealed & Ice Preserved	Sampling Location	Dust Fall-1:Mines Area
Test Started On	23 08 2019	Sample Received On	23 08 2019
		Test Completed On	30 08 2019

DF-1	Analysis Result					
Parameters	DF (t/km2/month)	Ni(%)	Co (%)	Hg(%)	As (%)	Fe (%)
*DF & M	2.62	0.088	0.052	<0.001	<0.001	1.28

Note: Above (%) parameters are not in our NABL scope

1. The test values are reported based on the samples received. 2. Samples will be destroyed after 7 days from date of issues of the test report subject to nature of preservation. Sample will be preserved as per standard method. 3. The test report shall not be reproduced without written approval of laboratory





Land Use/Land Cover (Core Zone) - Noamundi Iron Mine

The Resource SAT-II with multispectral bands LISS IV & Carto SAT -I with monochromatic band of dates 13.01.2018 (LISS-IV), 03.02.2018 & 02.12.2017 respectively.

Analysis Report – Free Silica Noamundi Iron Mine

Date of Sampling	Report No.	Free Silica (%)
07.04.2019	ENV LAB/19/R-0268	0.82
07.05.2019	ENV LAB/19/R-0695	0.44
03.06.2019	ENV LAB/19/R-1096	0.51
08.07.2019	ENV LAB/19/R-1924	0.61
22.08.2019	ENV LAB/19/R-3368	0.36
07.09.2019	ENV LAB/19/R-4580	0.32



Lab-in-Charge

**NOAMUNDI IRON MINE
AVERAGE AIR QUALITY REPORT (CORE ZONE)**

Month	MRSS Building			Bottom Bin			GM's Office			Near Hospital						
	PM ₁₀	PM _{2.5}	SO ₂	NO _x	PM ₁₀	PM _{2.5}	SO ₂	NO _x	PM ₁₀	PM _{2.5}	SO ₂	NO _x				
Apr 19	69.77	36.94	5.89	12.22	74.89	28.99	5.19	12.99	58.54	24.25	3.96	11.27	56.24	26.25	5.96	11.40
May 19	74.41	34.28	7.28	12.71	77.13	32.43	5.36	13.78	61.23	27.54	3.96	12.48	59.46	26.36	6.53	13.06
Jun 19	45.09	20.99	4.15	16.31	50.06	24.16	4.25	13.53	46.31	21.74	4.10	19.38	43.42	20.39	4.15	20.64
Jul 19	43.31	22.25	4.23	16.36	50.60	26.27	4.35	17.83	47.65	21.98	4.20	19.97	44.98	20.78	4.15	19.38
Aug 19	24.97	15.61	4.10	14.30	32.88	19.03	4.40	15.08	29.44	17.01	4.10	14.42	26.66	16.32	4.10	14.49
Sep 19	30.32	15.64	4.35	11.84	39.77	22.89	4.27	18.97	36.16	19.41	4.55	15.25	32.04	17.55	4.28	13.00

AVERAGE AIR QUALITY REPORT (BUFFER ZONE)

Month	Mahudi village					Noamundi village					Mirelbera village					Bada Baljori village				
	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Apr 19	51.70	30.20	5.35	11.9	0.33	56.50	34.00	6.80	11.9	0.40	51.20	29.50	6.75	11.8	0.45	52.90	24.90	5.85	11.95	0.41
May 19	34.00	17.60	<4.0	<9.0	0.18	33.70	16.75	<4.0	<9.0	0.07	36.80	20.20	<4.0	<9.0	0.29	37.50	18.35	<4.0	<9.0	0.25
Jun 19	34.70	18.50	<4.0	<9.0	0.21	34.40	18.20	<4.0	<9.0	0.07	38.40	22.50	<4.0	<9.0	0.25	41.50	19.20	<4.0	<9.0	0.31
Jul 19	37.50	18.90	<4.0	<9.0	0.20	35.85	18.80	<4.0	<9.0	0.07	41.70	20.50	<4.0	<9.0	0.29	42.20	20.20	<4.0	<9.0	0.35
Aug 19	32.20	15.80	<4.0	<9.0	0.15	28.80	15.60	<4.0	<9.0	0.06	32.70	19.20	<4.0	<9.0	0.22	33.50	16.95	<4.0	<9.0	0.20
Sep 19	26.00	14.56	<4.0	<9.0	0.12	27.20	15.23	<4.0	<9.0	0.11	30.65	17.16	<4.0	<9.0	0.19	30.50	17.08	<4.0	<9.0	0.13
Month	Kitabera					Mahadev Nasha village					Kudsum village					Hindula village				
	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO
Apr 19	51.70	31.60	5.85	11.8	0.22	49.50	31.75	6.00	12.1	0.24	45.80	30.30	5.15	10.9	0.31	50.80	28.60	6.00	12.15	0.40
May 19	53.50	32.70	6.10	12.4	0.34	51.50	33.90	7.00	13.0	0.32	48.30	31.50	5.95	11.4	0.30	55.40	30.00	6.35	13.00	0.46
Jun 19	57.15	35.20	6.50	12.9	0.38	53.90	35.50	7.35	13.2	0.37	54.70	33.70	8.45	12.9	0.34	55.00	32.00	6.90	13.70	0.52
Jul 19	37.50	21.80	6.10	12.0	0.38	41.20	26.90	7.50	12.9	0.34	40.70	28.80	7.90	12.0	0.39	38.50	29.40	7.10	13.65	0.37
Aug 19	39.50	22.30	5.50	11.5	0.26	44.30	31.20	6.55	12.4	0.26	46.20	25.20	5.70	10.9	0.25	36.00	29.10	5.80	12.35	0.43
Sep 19	34.50	19.32	4.35	9.40	0.22	35.00	19.60	5.90	10.9	0.19	35.35	19.80	5.15	11.0	0.20	34.50	19.32	5.15	11.80	0.35

Unit of measurement for all parameters except CO is µg/m³. Co is in mg/m³

Sumit
Lab-in-charge

ANNEXURE – IX

**AMBIENT NOISE QUALITY AT NOAMUNDI
AVERAGE Apr'19 - Sep'19**

	Location	Day Time 8.00 am to 10.00 pm	Limits in dB(A) Leq	Night Time 8.00 am to 10.00 pm	Limits in dB(A) Leq
Residential area	Hospital Premises	51.09	align="center">55.00	36.15	align="center">45.00
	Training Centre	51.77		37.06	
	GM's Office	52.21		35.44	
	Township	53.14		39.40	
Industrial area	Mining area	65.72	align="center">75.00	61.70	align="center">70.00
	Plant area	68.33		64.95	

Rehob
Lab-in-charge

Environmental Expenditure (2018-19)
Noamundi Iron Mine, TATA Steel Ltd

Sl. No.	Heads / Item	Expenditure (Lakhs)	
		Capital	Recurring
1.	Development & maintenance of Gardens	00	114.99
2.	Development of Nursery & sapling for plantation	00	86.27
3.	Tree Planation & maintenance	00	53.24
4.	Special studies at Noamundi Mines (carbons Sequestration, Energy audit, Water budgeting, Occupational health study etc)	00	21.54
5.	Environmental monitoring	00	02.00
6.	CAAQMS maintenance & operation	00	03.54
7.	Installation of new piezometers	30.00	00
8.	Coir matting at slime dump area	73.00	00
9.	Operation of Mobile Water Sprinkler	00	144.00
10.	Operation & maintenance of Permanent Water Sprinkling	00	29.73
11.	Cleaning of Settling pits & garland drains	00	15.00
12.	Operation & Maintenance BF water mist gun	00	03.00
13.	Cleaning of check dams and siltation ponds	00	50.00
14.	Water recycling Operation from HRT	00	106.75
15.	Water recycling Operation from slime dam and check dam	00	48.80
16.	Water recycling from mien pits	00	52.08
17.	Water recovery & recycling system	00	50.00
18.	Operation & Maintenance of dry fog system	00	136.60
19.	Spillage material recovery	00	80.00
20.	Operation & maintenance of dry fog at 1000TPH	00	03.38
21.	Dust suppression system maintenance	09.65	00
22.	Operation & maintenance of used oil collection system	00	26.76
23.	Housekeeping of RLS, stackers, OLCS etc	00	84.82
24.	New Bio-toilets installation & maintenance	06.15	02.50
25.	Tow wall extension & garland drain	00	25.00
26.	Sewage collection & disposal	00	15.00
27.	PCC road in colony and other area	00	06.00
28.	Soild waste disposal system	00	16.60
29.	Operation & maintenance of WTP	00	35.90
30.	Operation & maintenance of STP's & ETP's	00	20.60
31.	New ETP (10 KLD) & STP (50 KLD)	60.00	00
32.	Mobile water sprinklers maintenance at mines	00	51.25
33.	Environmental awareness events	00	25.00
34.	Bio-diversity initiatives implementation (niche nesting etc)	00	04.50
35.	Operation & maintenance of solar plant	00	05.00
36.	New pond construction, RWH etc in surrounding villages	80.95	00
Total		259.75	1319.85
Environmental Expenditure for the year 2018-19 at Noamundi Iron Mine = ~15.79 Cr			

At. Reg. P.H. of NIM - 2011

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आरक्षित का सर्वाधिक प्रसारित दैनिक

लोक चुनावों की सूचना

भारत लोकसभा के निर्वाचन आयोग के विस्तार/संशोधन अधिनियम, 2011 के अंतर्गत 10 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 18 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 11.80 बनें।

भारत लोकसभा के निर्वाचन आयोग के विस्तार/संशोधन अधिनियम, 2011 के अंतर्गत 10 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 18 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 11.80 बनें।

भारत लोकसभा के निर्वाचन आयोग के विस्तार/संशोधन अधिनियम, 2011 के अंतर्गत 10 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 18 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 11.80 बनें।

भारत लोकसभा के निर्वाचन आयोग के विस्तार/संशोधन अधिनियम, 2011 के अंतर्गत 10 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 18 निर्वाचन क्षेत्रों (आरक्षित क्षेत्रों) में निर्वाचन क्षेत्रों की संख्या 11.80 बनें।

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(दिसंबर 2011) सदन सचिव

