Deputy Director General of Forests (C),
Ministry of Env., Forest and Climate Change,
Integrated Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar – 751023
Email: roez.bsr-mef@nic.in

MD/ENV/1290 /104 / 2024
Date: 25.11.2024

Ref: Environmental Clearance letter no. IA-J-11015/63/2018. IA. II(M) dated: 05.08.2021.

Sub: Half-yearly compliance status report of Environmental Clearance conditions for the period April 2024 – September 2024 in respect of Katamati Iron Mine, M/s Tata Steel Limited.

Dear Sir,

Kindly find attached herewith the half-yearly compliance status report in respect of the stipulated Environmental Clearance conditions of Katamati Iron Mine, M/s Tata Steel Limited for the period from **April 2024 – September 2024.**

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: M/s Tata Steel Limited

Chief (Mine planning & Projects), 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, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012 (Odisha)
: The Regional Officer, SPCB, College Road, Baniapata, Keonjhar – 758001 (Odisha)

Your (Half Yearly Compliance Report) has been Submitted with following details	
Proposal No	IA/OR/MIN/123688
Compliance ID	110525413
Compliance Number(For Tracking)	EC/M/COMPLIANCE/110525413/2024
Reporting Year	2024
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	29-11-2024
RO/SRO Name	ARTATRANA MISHRA
RO/SRO Email	jhk109@ifs.nic.in
State	ODISHA
RO/SRO Office Address	Integrated Regional Offices, Bhubaneswar
Note:- SMS and E-Mail has been sent to ARTATRANA MISHRA, ODISHA with Notification to Project Proponent.	

HALF-YEARLY EC COMPLIANCE REPORT FOR
KATAMATI IRON MINE OF TATA STEEL LIMITED

ENVIRONMENTAL CLEARANCE NO. IA-J-11015/63/2018-IA-II(M) DATED 05.08.2021
(Period of Compliance: April 2024 to September 2024)

Sl	Specific Conditions	
i.	Environmental Clearance (EC) shall be valid up to the lease period only i.e. up to 31.03.2030.	Noted.
ii.	The budget of Rs. 7.36 Crores to address the concerns raised by the public including in the public hearing to be completed within 3 years from the date of start of mining operations. PP shall comply with all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes.	Complied. All the commitment made during PH are implemented. Details of PH commitments is attached as **Annexure-I**.
iii.	The Project Proponent shall undertake the adequate plantation in peripheral zone as well as gap plantation with the seedling of 6-8 ft height with at least 90% survival rate to control the dust at source and should be completed within 2 years from the date of commencement of mining operations. Causalities of the previous year should be replaced other than the saplings proposed to be planted every year	Complied. Adequate number of saplings have been planted in the safety zone. A total of 11276 nos. of saplings were planted during the period April to September 2024. Photographs of Plantation is attached as **Annexure-II**.
iv.	The Project Proponent shall make efforts for Sal plantation for restoring the mine lease area. PP shall provide tree guard to maintain the early stages of plant growth.	800 nos. of sal plantation was done during the FY 2023-24 and 400 nos. of sal plantation is done during the period April to September 2024 along with maintenance activities and tree guard are provided to maintain early stages of plant growth.
v.	Geomats to be used as erosion control blanket which should be biodegradable and accordingly validated through testing from a recognized institution/ laboratory.	Geo-textile coir mat (bio-degradable) has been laid on the slope of sub grade dumps along with grass seeding to minimize soil erosion from the dump. Validation from the recognized institution/laboratory shall be done at the earliest. Details of coir mat and photographs attached as **Annexure-III**.
vi.	The conservation plan in consultation with the Forest Department shall be implemented and compliance of the same shall be submitted to IRO of MoEFandCC before 1st July of every year.	The new conservation plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023.
vii.	Project proponent shall furnish a certificate from DFO regarding satisfactory compliance of site specific wildlife conservation plan.	The new conservation plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023.
viii.	The Project Proponent shall obtain the Renewal of NOC from CGWA for withdrawal of ground water before undertaking mining operations.	The mine has been granted renewal of CGWA NOC (460m^3/day) issued vide no. CGWA/NOC/MIN/REN//2/2023/7915, dated 26.05.2023 which is valid till 09.10.2024. Application for renewal of CGWA NOC was submitted on 8th October 2024.
ix.	The Project Proponent should undertake the soil conservation/ restoration activity in a way that the habitats can be restored.	Soil conservation/ restoration efforts such as soil amendments with cow-dung and manure, mulching, grass cover development, management of invasive species/ exotic species as well as selection of only native

		species for plantation, etc. are done so that habitats can be restored.
B. Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj Districts of Odisha State:		
1)	Project Proponent and Department of Steel and Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.	Noted and shall be complied.
2)	Department of Steel and Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.	TSL will adopt the necessary environmental protection measures and abide by the sustainable annual production limit mentioned in regional plan prepared by Department of Steel and Mines, Govt. of Odisha.
3)	Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel and Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has· not constructed proper cement concrete road as suggested. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.	Construction of cement concrete road of length 400 meters within the mine is completed, Photographs is attached as **Annexure-V**.
4)	The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.	Work order for deployment of mechanical sweeper has been placed and the mechanical sweeper has been deployed Photograph of vacuum sweeping machine is attached as **Annexure-VI**.
5)	Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEFandCC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office	Mine is ensuring the strict compliance to monitoring of environmental quality parameters and implementation of air pollution control measures as per EC and CTE/CTO conditions. Katamati iron mine is regularly submitting the half-yearly EC and compliance reports to respective authorities.

	of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.	TSL will continue to furnish the required information and extend all support during the site visits by statutory agencies.
6)	Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.	Being Complied. Out of 13.5 MTPA total production, approximately 9.5 to 11.5 MTPA of ROM shall be processed in tandem with Noamundi ore in the processing plant located at Noamundi and conveyed through closed conveyor belts to the private railway siding at Noamundi. Final product is dispatched from the private railway siding and other public railway sidings. Approximately 4 MTPA ROM shall be processed at the processing plant located at Katamati. The finished product shall be continued to be sent to the steel plants through railway siding either through Noamundi or through public siding at Deojhar or by road directly to the steel plants. Currently there is a proposal for dispatching around 2 MTPA processed ore (maximum) by trucks which will only be taken up when there is a shortage of racks and wagon availability from Railway. Road dispatch is proposed only till upgradation of logistics and dispatch facilities at Noamundi private railway siding. After adoption of SOTM, all material will be transported to Noamundi for onward dispatch by rail through the private rail siding.
7)	The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to Regional office of the MoEFandCC.	Noted.
8)	Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. This Environmental Clearance for the expansion project shall be operated only after	Parking area for outside trucks with all amenities like drinking water facility, rest shelter with urinal facility, illumination etc. has been provided.

	the compliance of the above-mentioned specific condition.	
9)	Department of Steel and Mines shall ensure the construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. This shall be completed within 2 Years.	TSL will extend any support if desired by the State Government.
10)	Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.	Work order for deployment of mechanical sweeper has been placed and the mechanical sweeper has been deployed. Photograph of vacuum sweeping machine is attached as **Annexure-VI**
11)	In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel and Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.	TSL will abide by the guidelines issued by the Department of Steel and Mines, Govt of Odisha in this regard.
12)	RandD studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. RandD studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel and Mines, Individual Mine Lease Holders.	The ROM include sub-grade ore from Katamati mine shall be beneficiated in the proposed Iron-ore processing plant being installed to beneficiate low-grade ores at Noamundi. Further Tata Steel's R and D Department is currently researching the technology for briquetting of slimes/ tailings.

13)	The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 and 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel and Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel and Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.	We will abide by the directions of Department of Steel and Mines, Govt of Odisha in this regard.
14)	State Govt. of Odisha shall make all efforts to ensure exhausting all the iron and manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel and Mines, Govt. of Odisha.	We will work according to the instructions given by the Department of Steel and Mines, Govt of Odisha in this regard.
15)	Mining Operations/Process Related: Project Proponent shall implement the following mitigation measures: (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall	Being complied. (i) Mining activities are carried out as per IBM approved mining plan. Due diligence is exercised for machinery selection. All drilling machines are equipped with in-built dust extraction/ suppression system which has an interlock which prohibits drilling without water. The photographs of the drilling machine is attached as **Annexure-VI**. (ii) The fleet of dumpers has been continually upgraded and currently we only have 100T LandT Komatsu make HD785 dumpers which are fuel-efficient, generate very less noise and contribute to less GHG emissions. Timely maintenance schedule is maintained, and records are maintained. (iii) A state of the art Fleet Management System has been adopted which gives a real-time information of fuel consumption, productivity and health of the machinery (dumpers, excavators, drills, dozers,

	be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.	etc). This digitalization initiative contributes significantly to monitor and reduce fuel consumption and increase productivity. The details of fleet management system is attached as **Annexure-VII**. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles are being done as per manufacturer's instructions/ recommended time schedule and record is maintained. (iv) Digital processing of the entire lease area using remote sensing technique is being carried out annually with inputs from ORSAC for monitoring the land use pattern and the mining activity and also the area excavated in Pits is being demarcated based on the remote sensing analysis. TSL has engaged ORSAC for the same. The Map is enclosed as **Annexure-VIII**.
16)	Air Environment Related: Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM_{10}, $PM_{2.5}$, $S0_2$, NOx and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines	i) Fugitive dust emissions from all the sources are being controlled regularly on daily basis. The fugitive dust monitoring report is attached as **Annexure-IX**. A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. The photographs of same are attached as **Annexure-XI**. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms. ii) 2 nos. Continuous Ambient Air Quality monitoring system is installed inside Mining Lease area for monitoring PM_{10}, $PM_{2.5}$, SO_2, NOx and CO in the core zone on daily basis. Two manual ambient air quality monitoring stations have been established in the core zone for PM_{10}, $PM_{2.5,}$ SO_2, NOx and CO monitoring. Monitoring is done by NABL accredited lab and the reports are submitted to Board regularly. AAQ Monitoring report is attached as **Annexure-XII**. (iii) We have one CAAQMS station in the buffer zone and the data is transmitted to SPCB server.

	having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM_{10}, $PM_{2.5}$, SO_2, NOx and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine {periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.	(iv) Vehicular emission checks of all the wheel mounted HEMMs are done at regular intervals. Maintenance of mining equipment is done on regular basis. It is mandatory for any vehicle entering the mine premises to have a valid fitness certificate. PUC certificates of HEMMs is attached as **Annexure-XIII**. (v) It is ensured that all the vehicles exiting the mine gate are checked for use of tarpaulin cover and are not overloaded.
17)	Noise and Vibration Related: Project Proponent shall implement the following mitigation measures: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate 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. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.	i) Blasting operation are being carried out during day time only. Blasting is done using the controlled blasting technique. In this regard, one study has been made by CIMFR (Central Mining and Fuel Research Institute), Dhanbad and recommendations therein are being followed. Initiation system is through either NONEL/electronic detonation system so as to ensure minimal ground vibration. Sample blasting vibration monitoring report is attached as **Annexure-XIV**. ii) Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs. (iii) Monitoring of Noise level are being done regularly at the identified major sources of noise generation within core zone. Noise monitoring report is attached as **Annexure-XV**. Necessary efforts are made to maintain the noise level with in the acceptable limits of CPCB (CPCB, 2000). We will follow these instructions accordingly. iv) All efforts are taken to ensure that blast-induced ground vibrations remain within safe limits by using NONEL/ electronic detonation system. Vibration monitoring is done for every blast and records maintained thereof and their recommendations are

		strictly followed. CIMFR also studies the ground-vibration and suggests the mine management best blasting practices.
18)	Water/Wastewater Related: Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA-EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoffs etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and	i) Based on observations from nearby wells and water bodies, the water table in the area is about 519 mRL. Whereas, the maximum depth at conceptual stage is considered to be 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed and the mining operation will not intersect ground water table. ii) No perennial nala / stream passes through the mining lease area. iii) Regular monitoring of ground water level on monthly basis and its quality on quarterly basis is being carried out within the mine lease area and surrounding areas. A network of dug wells and borewells with piezometers already exists for this purpose. Water quality and Level monitoring report and Piezometer photographs is attached as **Annexure-XVI A and B respectively**. iv) During monsoon, accumulated mine pit water is not discharged outside and is allowed to seep through to augment the ground water resources. v) Due to area constraint inside the mine lease area ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment ground water table. vi) Appropriate mitigation measures (viz. garland drains, retaining walls, collection of runoff etc.) are taken to prevent pollution of nearby river/other water bodies. photographs are attached as **Annexure-XVII**. The water quality monitoring is being carried out regularly by NABL accredited laboratory. vii) There is no industrial wastewater being generated at Katamati. Maintenance of HEMMs is done centrally at Noamundi Workshop. viii) A 30 KLD CETP along with Oil and Grease trap is installed to treat all the effluent generated from washing of HEMM's in workshop at Noamundi. This caters to Katamati mine as well.

	wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.	STPs have been installed in the township located in Noamundi mine lease areas. There is no separate colony in the Katamati mine lease area. ix) Through a series of retention wall, garland drain, settling pits and check dams, it is ensured that no silt originating due to mining activity is transported in the surface water course or any other water body. x) Adequate measures to prevent soil erosion like grass plantation/ coir matting on dump slopes are practiced. Further plantation with native species is done on all dump slopes. Dumps are protected by retaining walls. xi) Garland drains are constructed at the foot of the dumps to arrest silt. Check dams have been constructed for retention of suspended solids and allowing flow of clear water. This prevents contamination of outside water bodies from the wash-offs of the lease area. The check dams are periodically de-silted to keep them efficient. xii) The mine pit water is utilized for water sprinkling on haul roads and for plantation activities. xiii) There is zero waste-water discharge by the mine and it will be maintained in the future as well. Optimization of the water consumption will be done to reduce the specific water consumption year-on-year.
19)	Land/ Soil/ Overburden Related: Project Proponent shall implement the following mitigation measures: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralized area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site (s) only and should not be kept active for long period.	i) Preservation of topsoil: No topsoil generated during the reporting period. Previously generated topsoil has been utilized for the purpose of green belt development, dump stabilization and horticulture activities. ii) Its being followed. iii) OB/ low grade Ore are stacked at earmarked dump sites as per the approved Mining Plan. Dump stability studies have been conducted by CIMFR, Dhanbad scientists and as per the recommendation of their experts, the height of the dump will be maintained.

	The dump height should be decided on case-to-case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.	The measures for dump management as suggested are already being implemented to take care of any erosion and for its stabilization. The plantation is monitored and maintained till it becomes self-sustaining. The records pertaining to plantation – species name, growth, area coverage is maintained at the mine. iv) Garland drains, Check dams and settling pits have been provided at appropriate places to arrest silt and sediment flows to ensure that only clear water will leave from lease boundary. The water collected is used for dust suppression and green belt development. The structures are regularly de-silted and maintained properly. Garland drains has been already constructed for the dumps as per the approved mine plan. Settling pits of adequate capacity has already been provided. v) Back filling of the area will be done as per the approved mining Plan. The afforestation of the dumps will be done accordingly. vi) Hazardous wastes management is being done as per the provisions of Hazardous Waste Management Rules, 2016. The copy of HW Annual Return in Form-IV is attached as **Annexure-XVIII**.
20)	Ecology/Biodiversity (Flora-Fauna) Related: Project Proponent shall implement the following mitigation measures: (i) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and	i) A detailed Site-Specific Wildlife Conservation Plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023. ii) We are taking all the suggested measures like selection of the correct local species mix, fruit-species plantation, etc. to enhance the biodiversity of the region.

	fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. Responsibility: Individual Mine Lease Holders and State Forest and Wildlife Department.	iii) Green belt development done is monitored till it becomes self-sustaining. Relevant records as mentioned are being maintained by the horticultural specialist. iv) We have a Biodiversity Management Plan prepared by IUCN experts. It contains the list of native species suited for plantation in all conditions including for dust removal/ dust capturing plants. v) In consultation with IIT Kharagpur, Tata Steel has undertaken vetiver plantation in order to stabilize OB dumps. vi) It is in the scope of State Forest Department.
21)	Socio-Economic Related: Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further,	i) We have a separate wing named Tata Steel Foundation who take care of the social welfare activities and for the well-being and upliftment of the people residing near the project. They interact regularly with the local communities to identify their needs and

	basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.	requirement and accordingly plan the yearly activities in all the listed themes. ii) There is no case of displacement of people due to the project. iii) TSL is already supporting the State Government in facilitating the development of schools, conducting health camps, construction of medical facilities, provision of training and skill development programs, etc. and will continue to extend support in future too.
22)	Road Transport Related: Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry and exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel and Mines.	i) Katamati mine will abide by the SOTM system as and when the guidelines are formed by the Department of Steel and Mines, Govt of Odisha in this regard. ii) 400 meters of concrete road within the mine lease area is completed. Maintenance of all roads under TSL control is being done regularly to ensure dust-free road transport. iii) Transportation of final product by trucks, outside mine to the end-use steel plants, is being done by covering the trucks with tarpaulin so that no spillage takes place. Air quality monitoring (PM10) is being done near the exit point.

23)	1) Occupational Health Related: Project Proponent shall implement the following mitigation measures: (i) 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 periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work-related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full-time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. · Occupational health center should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).	i) Personal Protective Equipment for working in dusty areas are provided to all personnel. Periodic training on safety and health aspects is carried out at the training center. Details of PPEs and Training is attached as **Annexure-XIX.** ii) Initial Medical Examination and Periodic Medical Examinations are conducted for all employees at the TSL health facility periodically and records are maintained. This is being carried in compliance to Mines Act, 1952 and Rules 1956 and amendments thereto. During the period April to September 2024 a total of 103 nos. of IMEs were conducted and 44 nos. of PMEs were conducted. The occupational health surveillance shows that there is no occurrence of any kind of occupational health diseases. iii) Awareness programs on Occupational Health and Safety are being done regularly by our central medical team located at Jamshedpur. Similar programs are arranged at site level to include all the contract workers as well. A Central Hospital located at Noamundi caters to both Noamundi and Katamati mine. A full-time Occupational Health Specialist has been appointed in the hospital for periodic health check-up of employees and contractual workers. A program called Wellness-at-Workplace is being conducted at the mine and health of all mine workers is checked and monitored every month. All the health records are maintained. We will follow and implement the additional suggestions as provided.
C. STANDARD CONDITIONS		
I. Statutory Compliance		
1	This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.	Noted.
2	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India and Ors before commencing the mining operations.	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.

3)	The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining and Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India and Ors.	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.
4	The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".	All the conditions mentioned in the MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014 are being followed. The compliance of same is attached as **Annexure-XX.**
5	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	A copy of EC letter is sent to Deojhar panchayat and Anseikala panchayat with letter no. MD/ENV/173/110/2021 and MD/ENV/174/110/2021 dated 10.08.2021. Copy of same is attached as **Annexure-XXI**.
6	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.	Noted.
7	The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.	Details of Environment Clearance with regard to Katamati Iron Mine were published both in English (Orissa Post) and Odiya (Prameya) in local newspapers on 11.08.2021. The copy of the newspaper advertisement was sent to the Regional Office, MoEFandCC, Bhubaneswar with letter no: MD/ENV/187-A/98/2021 dated 16.08.2021. Copy of same is attached as **Annexure-XXII.**
8	The Project Proponent shall inform the MoEFandCC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, PP need to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.	Noted.
II. Air quality monitoring and preservation		

9)	The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.	Three continuous ambient air quality monitoring stations are installed in the core zone(two) and buffer zone(one) of mine lease area. Various parameters such as PM_{10}, $PM_{2.5}$, SOx, NOx and CO are being monitored as per guidelines. Four manual ambient air quality monitoring stations are installed at prominent places such as pit office, viewpoint etc. and monitoring is done on regular basis. The data is also been displayed using electronic display board in public domain. Average air quality data is enclosed as **Annexure- XII.**
10)	Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.	Fugitive dust emissions from all the sources are being controlled regularly on daily basis. A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. NALCO Dust Ban chemical is used for better effectiveness of dust control by water sprinkling. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
Ill. Water quality monitoring and preservation		
11)	In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.	Based on observations from nearby wells and water bodies, the water table in the area is about 519 mRL. Whereas, the maximum depth at conceptual stage is considered to be 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed and the mining operation will not intersect ground water table. Currently, the mining operation is restricted above the ground water table and shall not intersect the ground water table, in case of working below prior approval from MoEFandCC and CGWA shall be obtained. For domestic use and other purposes, the mine has been granted renewal of CGWA NOC (460m3/day) issued vide no. CGWA/NOC/MIN/REN//2/2023/7915, dated 26.05.2023 which is valid till 09.10.2024. Application

		for renewal of CGWA NOC is applied on 8th October 2024.
12)	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department *I* State Pollution Control Board.	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. The copy of ground water quality and level is attached as **Annexure-XVI A and B** respectively.
13)	The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.	No perennial nallah/stream present in the mine lease area. Water quality monitoring of nallahs present outside the mine lease area is done regularly and the reports are submitted to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. SW Quality and flow rate is attached as **Annexure-XXIII and XXIV** respectively.
14)	Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-	As there is no workshop present in the mine lease area, there is no generation of wastewater. All the surface runoff is allowed to pass through garland drains, check dams and then settling pit. The monitored data is displayed on an electric display board. The photograph of the display board is attached as **Annexure-XXV**.

	20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.	
15)	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.	Due to area constraint inside the mine lease area 96 nos. of ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment ground water table.
16)	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.	No industrial wastewater is being generated as there is no workshop present in Katamati Iron Mine. A CETP is of 30KLD capacity with Oil and grease trap facility is installed for treating the effluent generated from common workshop at Noamundi.
17)	The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEFandCC and State Pollution Control Board/Committee.	There is zero waste-water discharge by the mine and it will be maintained in the future as well. Water audit is carried out by an accredited consultant from CGWA and the improvements suggested are being carried out to reduce consumption of water. Optimization of the water consumption will be done to reduce the specific water consumption year-on-year.
IV. Noise and vibration monitoring and prevention		
18)	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	Monitoring of peak particle velocity is done during every blast and the reports are being maintained. Copy of vibration monitoring is attached as **Annexure-XIV.**
19)	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.	The illumination and sound has been done in such a way that the villagers are not disturbed. In addition to this we are planning to install noise barriers around the crushing and screening plant to significantly reduce the noise. The copy of Noise Monitoring report is attached as **Annexure-XV.**
20)	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health	Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs.

	aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.	
V. Mining plan		
21)	The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden and dump management, O.Band dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life; etc.).	Total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden and dump management, OBand dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining etc. shall be adhered to the Mine Plan.
22)	The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.	Noted. Land-use of the mine lease area shall be governed as per the approved mining plan. Excavation, backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area are governed as per approved mining plan. Report on plantation activities is being submitted regularly to the Board along with monthly reports.
VI. Land Reclamation		
23)	The Overburden (O.B.), waste and topsoil generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.	Over burden is stacked at the earmarked places only. The slopes of the OB dumps are terraced, and the overall slope angle is maintained. Generation of topsoil is very minimal because no fresh area is being broken for mining and the top soil generated, is being kept at the earmarked site(s) only inside the mining lease area and is being used for plantation and other vegetation and grassing activities. The inactive dump slopes are covered with geo-textile coir-mat and vegetated with native species, grass seeds and vetiver grass for better slope stabilization.
24)	The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/	Slope of the dumps are being stabilized by coir matting and vetiver grassing etc.,

	leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes I clay liners/ Bentonite etc. shall be undertaken for stabilization of the dump.	
25)	Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.	There is no discharge of any industrial effluent outside the mine lease. All the garland drains, settling pits and check dams of appropriate size, gradient and length been constructed both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into water bodies. Photographs of toe wall, garland drain and settling pits are attached.
26)	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.	All the garland drains, settling pits and check dams of appropriate size, gradient and length been constructed as per progressive mine closure plan both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into water bodies.
VII. Transportation		
27)	No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through	Out of 13.5 MTPA total ROM production, approximately 9.5 to 11.5 MTPA of ROM shall be processed in tandem with Noamundi ore in the processing plant located at Noamundi and conveyed through closed conveyor belts to the private railway siding at Noamundi. Final product is dispatched from the private railway siding and other public railway sidings. Currently there is a proposal for dispatching around 2 MTPA processed ore (maximum) by trucks which will only be taken up when there is a shortage of racks and

	road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. [If applicable in case of road transport].	wagon availability from Railway. Road dispatch is proposed only till upgradation of logistics and dispatch facilities at Noamundi private railway siding. After adoption of SOTM, all material will be transported to Noamundi for onward dispatch by rail through the private rail siding.
28)	The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
VIII. Green Belt		
29)	The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.	The green belt has been developed with native species on all along the safety zone and other area.
30)	The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall	Saplings planted apart from local grass plantation on dumps with various species. The species include Calotropis gigantean, ficus species, *Pedilanthus, Cynodon dactylon, Saccharum spontaneum,* B*ougainvilleas, Yellow durenta, etc.* are planted. *Saccharum spontaneum* planted on slime pond, shown encouraging results, which control the erosion bind the material and adequately covers the ground vegetation.

	also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.	
31)	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.	No grazing land has been acquired.
IX. Public hearing and human health issues		
32)	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.	Township has been developed at Noamundi (adjacent to Katamati mine) for workers with all the adequate facilities such as hospital, schools, STP etc.
X. Corporate Environment Responsibility (CER)		
33)	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEFandCC Office Memorandum No.22-65/2017-IA.11I dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.	Time bound action plan for undertaking the activities during Public Consultation has already been followed and submitted.
XI. Misecellaneous		
34)	The Project Proponent shall prepare digital map (land use and land cover) of the entire lease area	The digital processing of entire lease area is being carried out regularly. The current land use pattern is

	once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEFandCC.	made by M/s Geo Consultants Pvt. Ltd. the authorized agency by ORSAC, Bhubaneshwar.
35)	The Project Authorities should inform to the Regional Office 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. Katamati is an operational Iron mine of Tata Steel Ltd from last several decades. Thus financial closure and it's approval is not applicable.
36)	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC andits concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.	Six monthly compliance reports are being submitted regularly on the status of implementation of the stipulated environmental safeguards to the MoEFandCC, its Regional Office Bhubaneswar, Central Pollution Control Board and State Pollution Control Board. The copy of last submitted EC compliance report is attached as **Annexure-XXVI**.
37)	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.	A separate environmental management cell is in place with people having relevant qualification on environmental science. Organization has adequate environmental reporting system for adequate decision making. The formation details is attach as **Annexure-XXVII**.
38)	The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data/ information/ monitoring reports.	Full cooperation shall be extended to the officers in furnishing the requisite data/ information/ monitoring reports.
39)	In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause Vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	Shall be complied after ceasing of mining operations. Although concurrent grassing of the area is undertaken which has been already explained earlier.
40)	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted.
41)	Concealing factual data failure to comply with any or submission of false/ fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and' attract action	Noted.

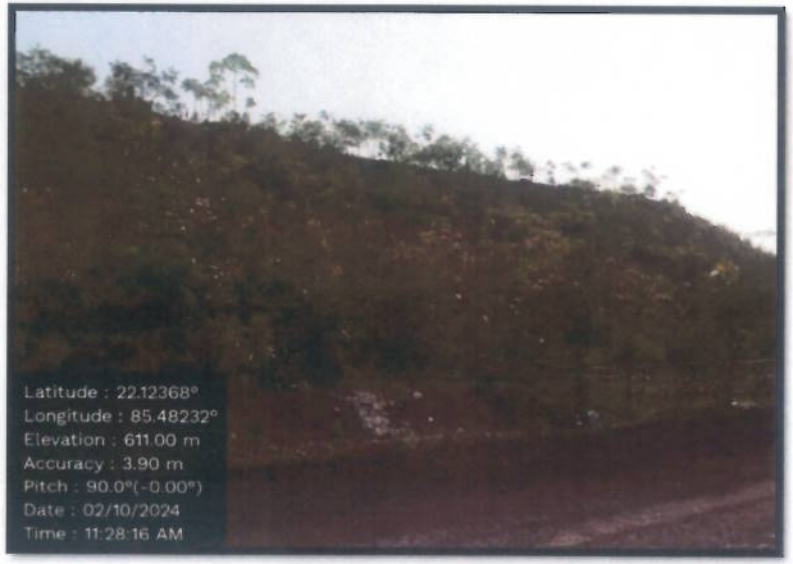
	under the provisions of Environment (Protection) Act, 1986.	

ANNEXURE-I

Katamati Iron Mine PH Implementation Status

SL.No	Activities	Particulars/ PH Requirements	Quantity	Status
1	Education	Construction of additional classrooms & boundary wall at Belaipada High School	1 no	Construction of additional classrooms & boundary wall at Belaipada High School is complete.
2		Provision of computer equipment at Saraswati Sishu Mandir School	5 nos.	Provided.
3	Livelihood	Construction of Goatery sheds	100 nos.	100 Nos. of goatery sheds constructed.
4		Support for Entrepreneurship development		Support provided to local villagers.
5	Swachh Bharat	Providing toilets to individual households	200 nos.	Toilets constructed for individual households
6		Providing toilet facility with water arrangements in two schools	2 units	Constructed toilet facility with water arrangement.
7	Agriculture	Construction of vermicompost pit	100 nos.	Work completed.
8	Infrastructure Development	Construction of Kalyan Mandap	1 no	Completed
9		Revamping of Temples (Murga Mahadev & Budha Temple)		Work completed
10		Construction of boundary wall, stage, platform, shed at playground.		Work completed
11	Health care	Setting up of Dispensaries at Deojhar GP & Anseikela GP	2 nos.	Work completed
12		Provision of Ambulance at Deojhar GP & Ansaikela GP	2 nos.	Work completed

ANNEXURE-II

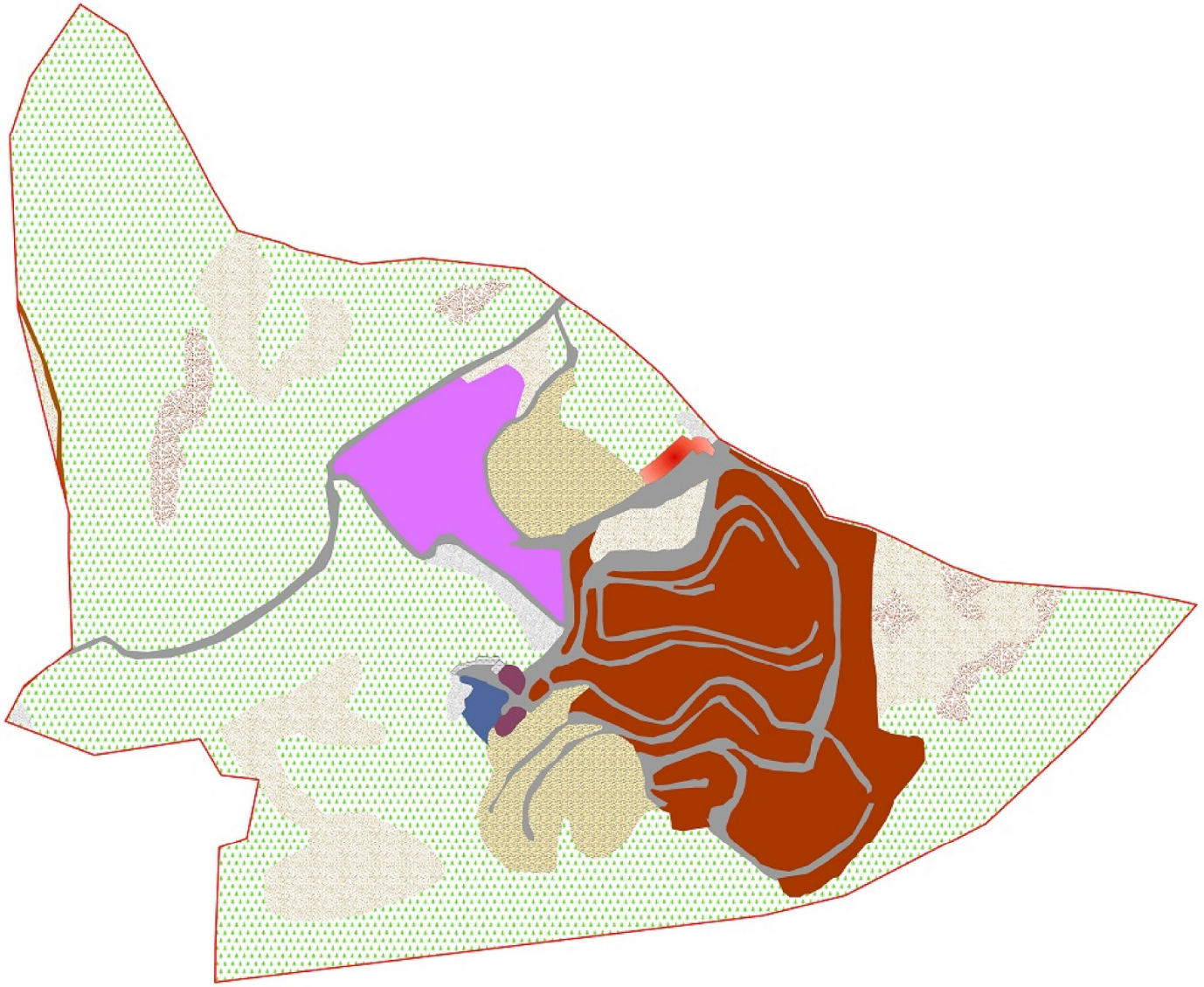


Photographs of plantation carriedout at Katamati Mines

ANNEXURE-III

Coir mat laid on dumps

ANNEXURE 4



KATAMATI IRON MINES
OF M/s TATA STEEL LTD

SCALE: 1:4,000
Meters
0 125 250 500 750

LEGEND

ML BOUNDARY

LANDUSE/LAND COVER

LEVEL-I	LEVEL-II	LEVEL-III	LEGEND	AREA IN HA	AREA IN %
BAIUT-UP LAND	ADMINISTRATIVE	OFFICE INFRASTRUCTURE		0.5675	0.1309
	INFRASTRUCTURE	INFRASTRUCTURE AREA		0.3348	0.0781
	TRANSPORT	MINES ROAD		28.3815	6.5488
		OTHER ROAD		0.6263	0.1576
INDUSTRIAL	PLANT	PLANT		1.2623	0.3130
MINING AREA	DUMP	DUMP		23.3980	5.8013
	MINING	STOCK		0.7788	0.1930
	QUARRY	OLD QUARRY AREA		9.8588	2.4442
		QUARRY		54.0503	13.4012
	SUME DAM	SUME DAM		18.3370	4.0506
VEGITATION COVER	NON FOREST	TREE COVER AREA		223.9431	55.5244
WASTE LAND	WASTE LAND	[illegible]		[illegible]	[illegible]
		LAND WITHOUT SCRUB		3.4161	0.8470
TOTAL AREA				403.3330	100.000

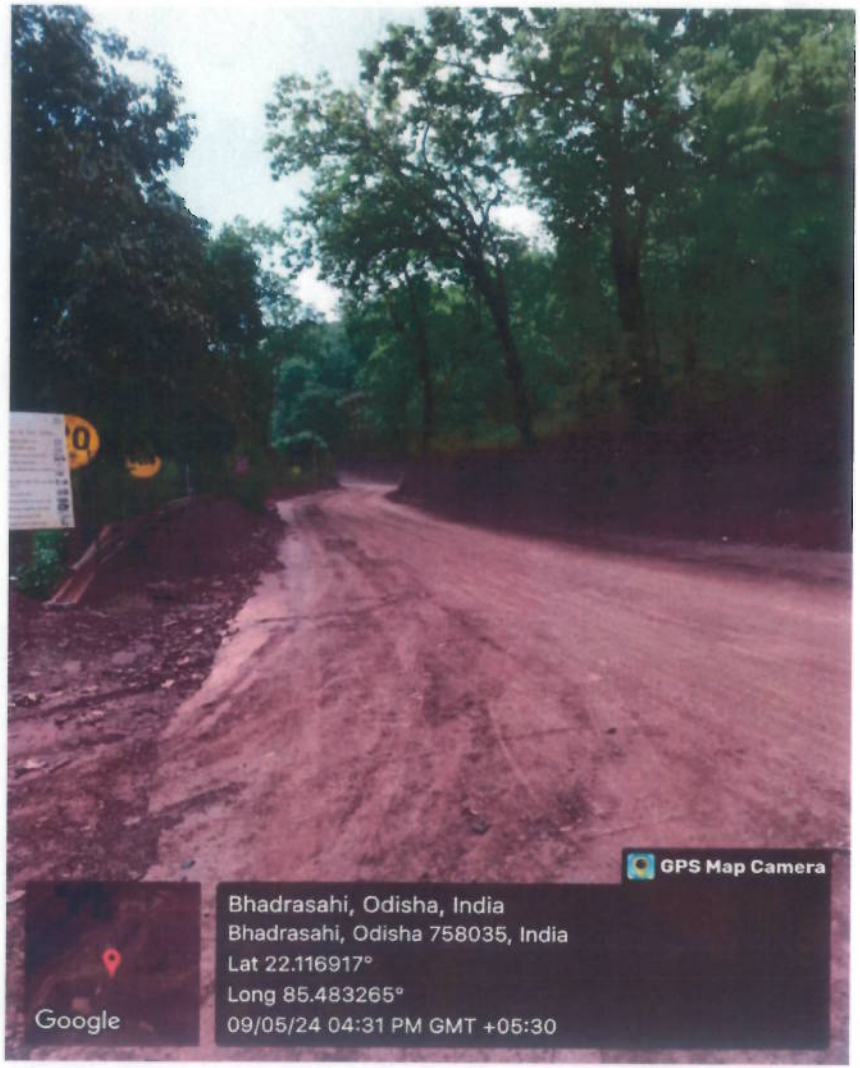
MAP PREPARED FOR THE YEAR ENDING ON 31.03.2021

Prepared for:
M/s TATA STEEL LTD. OMQ Division
Noamundi,West Singhbhum
Jharkhand

Prepared by:
Geo Consultants Pvt. Ltd
(Authorized Organisation of ORSAC)

Plot No-853, Govinda Prasad, Mahavir Nagar (Medical Lane),
In front of Reliance Fresh (Radhika Complex)
Cuttack Road, Laxmisagar, Bhubaneswar-751006, Odisha

ANNEXURE-V



Concrete Road constructed within the Mining lease area

ANNEXURE-VI

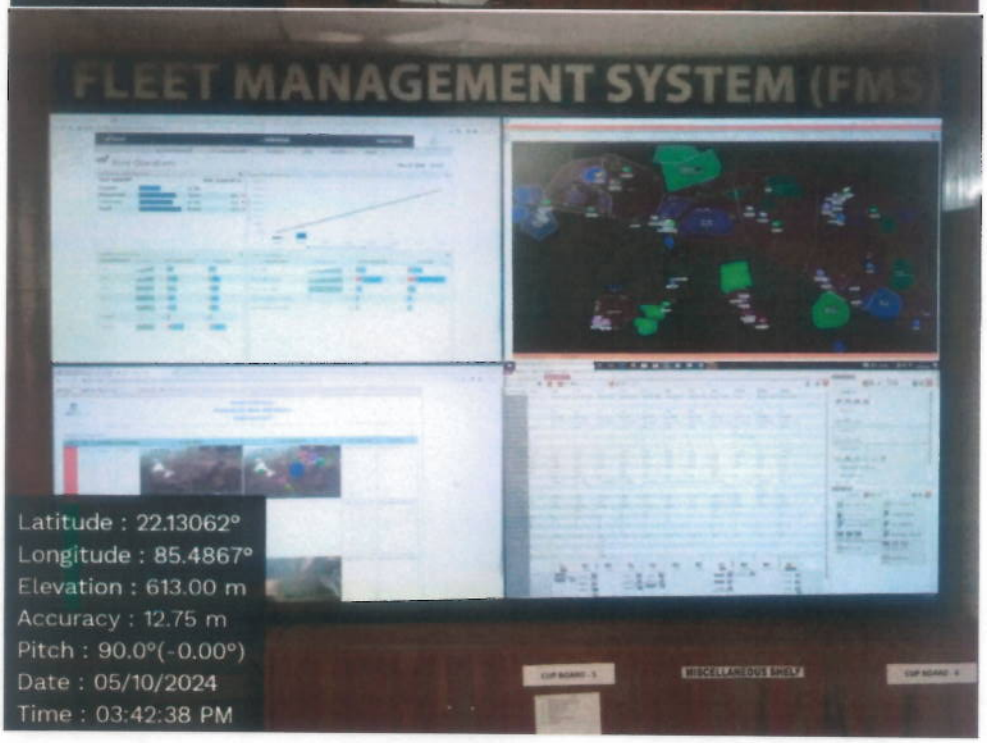
Vacuum Sweeping Machine in Operation

ANNEXURE-VII

Drilling Machine Operation with water injection system

ANNEXURE-VIII

- Improve command and control over fleet movement real time monitoring of vital KPIs.
- Identification of areas for improvement based on insight of data generated for continuous improvement.



ANNEXURE-VIII

ANNEXURE-IX

Summarised Fugitive Dust Monitoring Report					
Katamati Iron Ore Mine of M/s Tata Steel Limited					
Period: April 2024 to September 2024					
Mine Location	**Sampling Location**	**Month**	**Unit**	**Results**	**Norms**
Katamati Iron Ore Mine	Crushing & Screening Plant	April 2024	µg/m3	639.25	1200
		May 2024	µg/m3	656.13	1200
		June 2024	µg/m3	581.50	1200
		July 2024	µg/m3	466.88	1200
		August 2024	µg/m3	414.75	1200
		September 2024	µg/m3	454.63	1200
	Loading & Stacking	April 2024	µg/m3	645.63	1200
		May 2024	µg/m3	596.13	1200
		June 2024	µg/m3	553.75	1200
		July 2024	µg/m3	360.00	1200
		August 2024	µg/m3	434.38	1200
		September 2024	µg/m3	379.50	1200
	Haul Road	April 2024	µg/m3	732.63	1200
		May 2024	µg/m3	794.25	1200
		June 2024	µg/m3	701.63	1200
		July 2024	µg/m3	458.63	1200
		August 2024	µg/m3	484.00	1200
		September 2024	µg/m3	491.88	1200
	Waste Dump Site	April 2024	µg/m3	674.25	1200
		May 2024	µg/m3	618.13	1200
		June 2024	µg/m3	528.00	1200
		July 2024	µg/m3	376.00	1200
		August 2024	µg/m3	338.00	1200
		September 2024	µg/m3	309.38	1200
	Mining Face (Near Drill)	April 2024	µg/m3	687.38	1200
		May 2024	µg/m3	736.00	1200
		June 2024	µg/m3	610.25	1200
		July 2024	µg/m3	529.50	1200
		August 2024	µg/m3	423.88	1200
		September 2024	µg/m3	397.25	1200

Date: 20/01/2024

TATA STEEL LIMITED
BOMBAY HOUSE, 24, HOMI MODY STREET, FORT,
MUMBAI - 400001
MUMBAI
MAHARASHTRA
INDIA
27AAACT2803M2ZA(GSTIN Number)

Policy No : 0304009684
Renewal : 01
Endorsement : 00

Dear Sir / Madam,

We thank you for choosing **Tata AIG General Insurance Company Ltd**. as your preferred insurer. Your Policy No. Is 0304009684 01 00.

We are glad that you have chosen our product **PUBLIC LIABILITY ACT** and given us an opportunity to be your risk carrier for this Product.

'Casualty Line' caters to most of the Enterprises / Industries in India, whether Large, Medium or Small. As one of the India's most established insurance companies, we understand these unique needs of coverage. At Tata AIG we care for you and would strive to offer convenience coupled with a range of products that cater continously to your ever increasing needs.

Enclosed please find your policy docket based on the information furnished by you in the Proposal.

We look forward to a long and mutually beneficial relationship and providing you wider range of benefits in the years to come.

Yours Sincerely,
For Tata AIG General Insurance Company Limited

Authorized Signatory

PUBLIC LIABILITY ACT POLICY
POLICY SCHEDULE

Agent/Broker Name -DIRECT
Agent/Broker License Code - NA:Agent/Broker :Contact No - 24*7 Tollfree Helpline 1800-266-7780

Attaching to and forming part of Policy No.	0304009684 01 00
Name of Insured Owner:	TATA STEEL LIMITED
Business:	Principally including but not limited to; Manufacture of Steel & Steel related finished products (such as Coils, Sheets, Billets, Pipes, Burnt to shape & fabricated equipments, Tubes, Bearings, Wires, Packaging substrates, Agricultural tools tackles & equipment, etc.); design, manufacture and supply of high precision equipment for various industrial sectors; sale of By-Products of steel making, foundry-grade pig iron, mining of chrome and manganese ore to the production and sale of ferro-alloys and minerals; Captive mining of Coal, Iron Ore, etc.; Water Distribution, Power production & distribution, Integrated township management, real estate, and operations and maintenance design, construction and turnkey services as well as comprehensive EPC services; Erection & Commissioning of plant and equipment, logistics services, port operations, shipping, warehouse, industrial consulting, New Material Business (HDPE, PVC, GFX3 Paint, Conveyors and Idlers) and any other activities including the new activities taken up during the policy period and supporting activities anywhere in the world. • Please also refer to http://www.tatasteel.com and the Business activities as per MoA and respective subsidiaries website.
Address:	BOMBAY HOUSE, 24, HOMI MODY STREET, FORT, MUMBAI - 400001 MUMBAI MAHARASHTRA INDIA 27AAACT2803M2ZA(GSTIN Number) Place of supply -MAHARASHTRA State code -27
Territorial limits:	Anywhere in India

Policy Period: **From:** 01/01/2024 12:00 AM/ PM
To Midnight of: 31/12/2024 12:00 AM/ PM

Indemnity limit:Rs 50,000,000.00 in respect of any one accident and not exceeding 3 times thereof in the aggregate during the policy period.

Service Tax Registration No:

Premium	₹ 13,000.00
UGST/SGST @9 %	₹ 1,170.00
CGST @9 %	₹ 1,170.00

Contribution to the Environment Relief Fund:₹ 13,000.00

Date of Proposal and declaration:20/01/2024

In witness whereof the undersigned being duly authorized by the company and on behalf of the company has hereto set his hand at MUMBAI on 20/01/2024

The stamp duty of 0.25 paid in cash or demand draft or by pay order,vide Receipt/Challan no: LOA/CSD/01/2023/4269 dated the 25/10/2023

For Tata AIG General Insurance Company Limited

Authorized Signatory

Date :20/01/2024
Place :MUMBAI

Policy Servicing Office
Tata AIG General Insurance Company Limited
2ND FLOOR, CITI TOWER, 61, DR. S.S.RAO ROAD,, NEXT TO M.G.M HOSPITAL, PAREL(E), MUMBAI - 400012,MUMBAI,MAHARASHTRA,MUMBAI-400012
Tel No:22-22-62606600

RECEIPT

Receipt No. : 102001064963200

Receipt Date : 01/01/2024

Policy No : 0304009684 01 00

Received with thanks from TATA STEEL LTD a sum of ₹ **28,340.00** (Rupees Twenty Eight Thousand Three Hundred Forty And Paise Zero Only)

Sr. No.	Policy Number	Total Premium (₹)	Utilized from the receipt for policy (₹)	Balance (₹)
1	0304009684 01 00	28,340.00	28,340.00	0.00

Note:

1. This is a computer generated receipt and does not require a signature.
2. Upon issuance of this Receipt, all previously issued temporary receipts, if any, related to this Policy shall be considered null and void.
3. Amounts received by cheque shall be subject to realisation.
4. Any amount received in excess of the Premium is being/shall be refunded by the Company.

GSTIN : 27AABCT3518Q1ZW - MAHARASHTRA Service Accounting Code : 997139

Insurance is the subject matter of the solicitation. For more details on risk factors, terms and conditions, please read sales brochure carefully before concluding a sale.
TATA AIG General Insurance Company Ltd. Regd. Office: 15th floor, Tower A, Peninsula Business Park,Ganpatrao Kadam Marg, Off Senapati Bapat Marg, Lower Parel, Mumbai- 400 013.
IRDA Registration No.108, CIN No : U85110MH2000PLC128425, PAN : AABCT3518Q, UIN No : IRDAN108CP0058V01201819
Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

LIABILITY INSURANCE POLICY
(UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

1.OPERATIVE CLAUSE

Whereas the Insured Owner named in the schedule hereto and carrying on business described in the said schedule has applied to the Tata AIG General Insurance Company Limited (hereinafter called the Company) for the indemnity hereinafter contained and has made a written proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein and has paid the premium and statutory contribution towards the Environment Relief Fund as per the provisions of the Public Liability Insurance Act and the rules framed thereunder.

NOW THIS POLICY WITNESSETH that subject to the terms, exceptions and conditions contained herein or endorsed hereon, the company will indemnify the insured owner against the statutory liability arising out of accidents occurring during the currency of the policy due to handling hazardous substances as provided for in the said Act and the Rules framed thereunder.

2.DEFINITIONS:

a)"ACT" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act 1991 as amended from time to time;

b) "Accident" means an accident involving a fortuitous, sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radioactivity;

c) "Handling" in relation to any harzardous substance means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance;

d) "Hazardous Substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986, and exceeding such quantity as may be specified, by notification, by the Central Government;

e)"Owner" means a person who owns, or has control over handling any hazardous substance at the time of accident and includes:
i) in the case of a firm any of its partners;
ii) in the case of an association, any of its members, and
iii) in the case of a company, any of its directors, managers, secretaries or other officers who is/are directly in charge of, and is/are responsible to the company for the conduct of the business of the company;

f) "Turnover" shall mean
i) Manufacturing units-Annual Gross Sales of all goods including all levies and taxes
ii) Godowns/ warehouse owners-Total Annual rental receipts.
iii)Transport Operators-Total Annual freight receipts.
iv)Others-Total Annual gross receipts.

3. EXCLUSIONS:

(1) arising out of wilful or intentional non-compliance of any Statutory provisions.

(2) in respect of fines, penalties, punitive and/or exemplary damages.

(3) arising under any other legislation except in so far as provided for in Section 8 Sub Section (1) and (2) of the Act.

(4) in respect of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured Owner's control, care or custody.

(5) directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power;

(6) directly or indirectly caused by or contributed to by.

(a) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel

(b) the radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.

4. CONDITIONS:

(1) The Insured owner shall give written notice to the Company as soon as reasonably practicable of any claim made against the Insured Owner or of any specific event or circumstance that may give rise to a claim. The Insured Owner shall immediately give to the Company copies of notice of applications forwarded by the Collector and all

such additional information and or assistance that the company may require.

(2) No admission, offer, promise or payments shall be made or given by or on behalf of the Insured owner under this policy without the written consent of the Company.

(3) The Company shall not be liable for any claim for relief made after five years from the date of occurrence of the accident.

(4) The Insured Owner shall keep record of annual turnover, and at the time of renewal of insurance declare such turnover and all other details as may be required by the Company. The Company shall at all reasonable times have full rights to call for and examine such records.

(5) If at the time of happening of any accident resulting in a claim under this policy there be any other insurance covering the same liability, then the Company shall not be liable to pay or contribute more than its ratable proportion of such liability.

(6) This policy may be cancelled by the Insured Owner by giving 30 days notice in writing to the company in which event the Company will retain premium at short period scale subject to there not having occurred an accident during the policy period which may give rise to a claims(s), failing which no refund of premium shall be allowable.

(7) This Policy may also be cancelled by the Insurer by giving 30 days notice in writing to the Insured Owner in which event the Company shall be liable to repay on demand a ratable proportion of the premium for the unexpired term from the date of cancellation.

(8) If the Company shall disclaim liability to the Insured Owner for any claim hereunder and such claim shall not within 12 calendar months from the date of such disclaimer have been made the subject matter of a suit in a competent court of law, then the claim for the practical purposes shall be deemed to have been abandoned and shall not thereafter be recoverable hereunder or be made the subject matter of any suit.

(9) The Company shall not be liable to make any payment in respect of any claim if such claim shall be in any manner fraudulent or supported, by any person on behalf of the Insured Owner and/or if the insurance has been continued in consequence of any material misstatement or non-disclosure of any material information by or on behalf of the Insured Owner. In such a case if the Company pays any amount to the claimant due to any statutory provision such amount shall be recoverable from the Insured Owner.

(10) The Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been assigned in the Act and the Rules framed thereunder or in this Policy shall bear such specific meaning.

(11) Any dispute regarding interpretation of the terms, conditions and exclusions of this Policy shall be determined in accordance with the law and practice of a court of competent jurisdiction within India.

GRIEVANCE REDRESSAL POLICY

Grievance Lodgment Stage

The Company is committed to extend the best possible services to its customers. However, if you are not satisfied with our services and wish to lodge a complaint, please feel free to contact us through below channels:

Call us 24X7 toll free helpline 1800 266 7780
Email us at customersupport@tataaig.com

Write to us at : Customer Support, Tata AIG General Insurance Company Limited
A-501 Building No.4 IT Infinity Park, Dindoshi, Malad (E), Mumbai - 400097
Visit the Servicing Branch mentioned in the policy document

Nodal Officer

Please visit our website at www.tataaig.com to know the contact details of the Nodal Officer for your servicing branch.
After investigating the grievance internally and subsequent closure, we will send our response within a period of 10 days from the date of receipt of the complaint by the Company or its office in Mumbai. In case the resolution is likely to take longer time, we will inform you of the same through an interim reply.

Escalation Level 1

For lack of a response or if the resolution still does not meet your expectations, you can write to manager.customersupport@tataaig.com. After investigating the matter internally and subsequent closure, we will send our response within a period of 8 days from the date of receipt of your complaint.

Escalation Level 2

For lack of a response or if the resolution still does not meet your expectations, you can write to the Head-Customer Services at head.customerservices@tataaig.com. After examining the matter, we will send you our response within a period of 7 days from the date of receipt of your complaint. Within 30 days of lodging a complaint with us, if you do not get a satisfactory response from us and you wish to pursue other avenues for redressal of grievances, you may approach Insurance Ombudsman appointed by IRDA under the Insurance Ombudsman Scheme. Given below are details of the Insurance Ombudsman located at various centers.

List of Insurance Ombudsman Offices

Office of the Ombudsman	Address & Contact details	Jurisdiction of Office Union Territory, District
AHMEDABAD	Office of the Insurance Ombudsman, Jeevan Prakash Building, 6th Floor, Tilak Marg, Relief Road, Ahmedabad - 380 001. Tel.: 079 - 25501201/02/05/06 Email: bimalokpal.ahmedabad@ecoi.co.in	Gujarat, Dadra & Nagar Haveli, Daman and Diu.
BENGALURU	Office of the Insurance Ombudsman, Jeevan Soudha Building, PID No. 57-27-N-19 Ground Floor, 19/19, 24th Main Road, JP Nagar, Ist Phase, Bengaluru – 560 078. Tel.: 080 - 26652048 / 26652049 Email: bimalokpal.bengaluru@ecoi.co.in	Karnataka
BHOPAL	Office of the Insurance Ombudsman, Janak Vihar Complex, 2nd Floor, 6, Malviya Nagar, Opp. Airtel Office, Near New Market, Bhopal – 462 003. Tel.: 0755 - 2769201 / 2769202 Fax: 0755 - 2769203 Email: bimalokpal.bhopal@ecoi.co.in	Madhya Pradesh Chattisgarh
BHUBANESHWAR	Office of the Insurance Ombudsman, 62, Forest park, Bhubneshwar - 751 009. Tel.: 0674 - 2596461 /2596455 Fax: 0674 - 2596429 Email: bimalokpal.bhubaneswar@ecoi.co.in	Orissa
CHANDIGARH	Office of the Insurance Ombudsman, S.C.O. No. 101, 102 & 103, 2nd Floor, Batra Building, Sector 17 – D, Chandigarh - 160 017. Tel.: 0172 - 2706196 / 2706468 Fax: 0172 - 2708274 Email : bimalokpal.chandigarh@ecoi.co.in	Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Chandigarh
CHENNAI	Office of the Insurance Ombudsman, Fatima Akhtar Court, 4th Floor, 453, Anna Salai, Teynampet, CHENNAI - 600 018. Tel.: 044 - 24333668 / 24335284 Fax: 044 - 24333664 Email : bimalokpal.chennai@ecoi.co.in	Tamil Nadu, Pondicherry Town and Karaikal (which are part of Pondicherry).
DELHI	Office of the Insurance Ombudsman, 2/2 A, Universal Insurance Building, Asaf Ali Road, New Delhi – 110 002. Tel.: 011 - 23239633 / 23237532 Fax: 011 - 23230858 Email: bimalokpal.delhi@ecoi.co.in	Delhi
GUWAHATI	Office of the Insurance Ombudsman, Jeevan Nivesh, 5th Floor, Nr. Panbazar over bridge, S.S. Road, Guwahati – 781001(ASSAM). Tel.: 0361 - 2132204 / 2132205 Fax: 0361 - 2732937 Email : bimalokpal.guwahati@ecoi.co.in	Assam, Meghalaya, Manipur, Mizoram, Arunachal Pradesh, Nagaland and Tripura
HYDERABAD	Office of the Insurance Ombudsman, 6-2-46, 1st floor, "Moin Court", Lane Opp. Saleem Function Palace, A. C. Guards, Lakdi-Ka-Pool, Hyderabad - 500 004. Tel.: 040 - 65504123 / 23312122 Fax: 040 - 23376599 Email : bimalokpal.hyderabad@ecoi.co.in	Andhra Pradesh, Telangana, Yanam and part of Territory of Pondicherry.
JAIPUR	Office of the Insurance Ombudsman, Jeevan Nidhi – II Bldg., Gr. Floor, Bhawani Singh Marg, Jaipur-302 005. Tel.: 0141 - 2740363 Email: Bimalokpal.jaipur@ecoi.co.in	Rajasthan
ERNAKULAM	Office of the Insurance Ombudsman, 2nd Floor, Pulinat Bldg., Opp. Cochin Shipyard, M. G. Road, Ernakulam - 682 015. Tel.: 0484 - 2358759 / 2359338 Fax: 0484 - 2359336 Email : bimalokpal.ernakulam@ecoi.co.in	Kerala, Lakshadweep, Mahe-a part of Pondicherry
KOLKATA	Office of the Insurance Ombudsman, Hindustan Bldg. Annexe, 4th Floor, 4, C.R. Avenue, KOLKATA-700 072. Tel.: 033 - 22124339 / 22124340 Fax : 033 - 22124341 Email: bimalokpal.kolkata@ecoi.co.in	West Bengal, Sikkim, Andaman & Nicobar Islands
LUCKNOW	Office of the Insurance Ombudsman, 6th Floor, Jeevan Bhawan, Phase-II, Nawal Kishore Road, Hazratganj, Lucknow - 226 001. Tel.: 0522 - 2231330 / 2231331 Fax: 0522 - 2231310 Email : bimalokpal.lucknow@ecoi.co.in	Districts of Uttar Pradesh : Laitpur, Jhasi, Mahoba, Hamirpur, Banda, Chitrakoot, Allahabad, Mirzapur, Sonbhabdra, Fatehpur, Pratapgarh, Jaunpur, Varanasi, Gazipur, Jalaun, Kanpur, Lucknow, Unnao, Sitapur, Lakhimpur, Bahraich, Barabanki, Raebareli, Sravasti, Gonda, Faizabad, Amethi, Kaushambi, Balrampur, Basti, Ambedkarnagar, Sultanpur, Maharajgang, Santkabirnagar, Azamgarh, Kushinagar, Gorkhpur, Deoria, Mau, Ghazipur, Chandauli, Ballia, Sidharathnagar

MUMBAI	Office of the Insurance Ombudsman, 3rd Floor, Jeevan Seva Annexe, S. V. Road, Santacruz (W), Mumbai - 400 054. Tel.: 022 - 26106552 / 26106960 Fax: 022 - 26106052 Email : bimalokpal.mumbai@ecoi.co.in	Goa, Mumbai Metropolitan Region excluding Navi Mumbai & Thane
NOIDA	Office of the Insurance Ombudsman, Bhagwan Sahai Palace, 4th Floor, Main Road, Naya Bans, Sector 15, Distt: Gautam Buddh Nagar, U.P-201301. Tel.: 0120-2514250 / 2514252 / 2514253 Email : bimalokpal.noida@ecoi.co.in	State of Uttaranchal and the following Districts of Uttar Pradesh : Agra, Aligarh, Bagpat, Bareilly, Bijnor, Budaun, Bulandshehar, Etah, Kanooj, Mainpuri, Mathura, Meerut,Moradabad, Muzaffarnagar, Oraiyya, Pilibhit, Etawah, Farrukhabad, Firozbad, Gautambodhanagar, Ghazaibad, Hardoi, Shahjahanpur, Hapur, Shamli, Rampur, Kashganj, Sambhal, Amroha, Hathras, Kanshiramnagar, Saharanpur
PATNA	Office of the Insurance Ombudsman, 1st Floor,Kalpana Arcade Building, Bazar Samiti Road, Bahadurpur, Patna 800 006. Tel.: 0612-2680952 Email:bimalokpal.patna@ecoi.co.in	Bihar, Jharkhand
PUNE	Bhagwan Sahai Palace , 4th Floor, Main Road, Naya Bans, Sector 15, G.B. Nagar, Noida. NOIDA – 201301 Tel: 0120-2514250/51/53 Email: bimalokpal.noida@gbic.co.in	Maharashtra, Area of Navi Mumbai and Thane excluding Mumbai Metropolitan Region

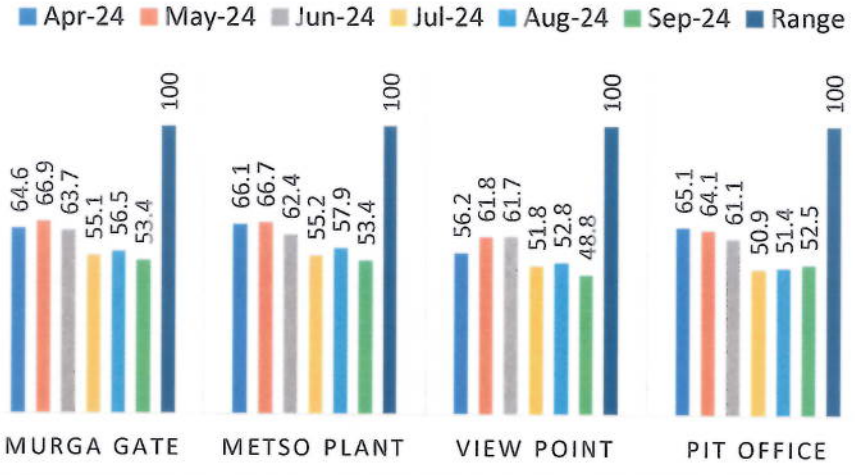
ANNEXURE-XI

Dry-fog system installed at Crushing & Screening Plant

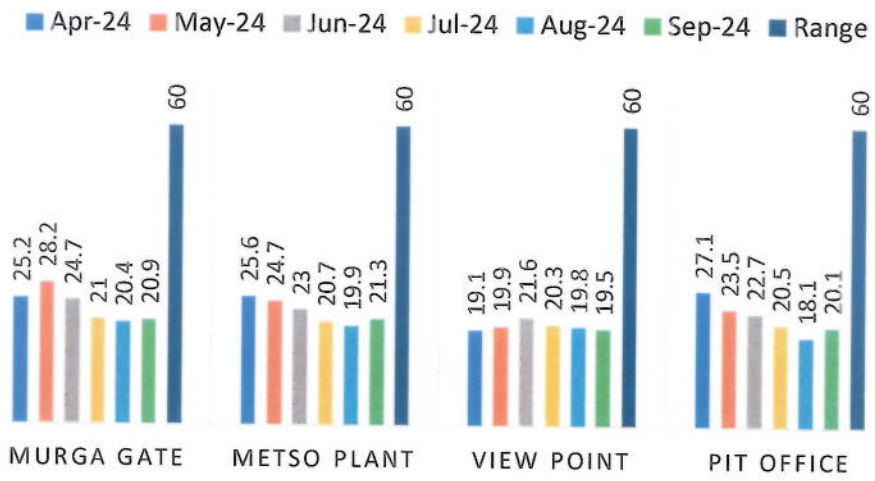
ANNEXURE-XII

Summarised Ambient Air Quality Monitoring Report								
Katamati Iron Ore Mine of M/s Tata Steel Limited								
Period: April 2024 to September 2024								
Mine location	Sampling location	Month	Range	Results in µg/m3				
				PM_{10}	$PM_{2.5}$	SO_2	NOx	CO
Katamati Iron Ore Mine	Murga Gate	Apr 24	Avg.	64.6	25.2	12.2	22.8	BDL (DL-0.5)
		May 24	Avg.	66.9	28.2	11.9	22.6	BDL (DL-0.5)
		Jun 24	Avg.	63.7	24.7	11.8	21.9	BDL (DL-0.5)
		Jul 24	Avg.	55.1	21.0	10.6	19.3	BDL (DL-0.5)
		Aug 24	Avg.	56.5	20.4	10.7	19.9	BLQ (LOQ-0.5)
		Sep 24	Avg.	53.4	20.9	10.6	21.2	BLQ (LOQ-0.5)
	Metso Plant	Apr 24	Avg.	66.1	25.6	11.3	21.9	BDL (DL-0.5)
		May 24	Avg.	66.7	24.7	12.3	21.9	BDL (DL-0.5)
		Jun 24	Avg.	62.4	23.0	11.0	20.1	BDL (DL-0.5)
		Jul 24	Avg.	55.2	20.7	11.1	20.4	BDL (DL-0.5)
		Aug 24	Avg.	57.9	19.9	10.5	21.1	BLQ (LOQ-0.5)
		Sep 24	Avg.	53.4	21.3	10.4	20.9	BLQ (LOQ-0.5)
	Viewpoint	Apr 24	Avg.	56.2	19.1	11.6	20.3	BDL (DL-0.5)
		May 24	Avg.	61.8	19.9	11.4	20.0	BDL (DL-0.5)
		Jun 24	Avg.	61.7	21.6	11.5	23.4	BDL (DL-0.5)
		Jul 24	Avg.	51.8	20.3	10.4	21.7	BDL (DL-0.5)
		Aug 24	Avg.	52.8	19.8	10.5	22.0	BLQ (LOQ-0.5)
		Sep 24	Avg.	48.8	19.5	9.5	20.0	BLQ (LOQ-0.5)
	Pit Office	Apr 24	Avg.	65.1	27.1	11.4	23.0	BDL (DL-0.5)
		May 24	Avg.	64.1	23.5	11.2	22.5	BDL (DL-0.5)
		Jun 24	Avg.	61.1	22.7	11.8	23.3	BDL (DL-0.5)
		Jul 24	Avg.	50.9	20.5	10.8	22.0	BDL (DL-0.5)
		Aug 24	Avg.	51.4	18.1	11.4	21.6	BLQ (LOQ-0.5)
		Sep 24	Avg.	52.5	20.1	11.9	20.4	BLQ (LOQ-0.5)

AMBIENT AIR QUALITY REPORT (PM-10)
APRIL 2024 TO SEPTEMBER 2024



AMBIENT AIR QUALITY REPORT (PM-2.5)
APRIL 2024 TO SEPTEMBER 2024



Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Jharkhand

Date	:	**09/07/2024**
Time	:	**16:02:07 PM**
Validity upto	:	**08/01/2025**

Certificate SL. No.	:	JH00600110003979
Registration No.	:	OD11A1738
Date of Registration	:	29/Apr/2013
Month & Year of Manufacturing	:	November-2012
Valid Mobile Number	:	******8748
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	JH0060011
GSTIN	:	
Fees	:	Rs.120.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.59

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Jharkhand

Date	:	**15/10/2024**
Time	:	**17:15:37 PM**
Validity upto	:	**14/04/2025**

OD11A1678

Certificate SL. No.	:	JH00600110004226
Registration No.	:	OD11A1678
Date of Registration	:	18/Apr/2013
Month & Year of Manufacturing	:	November-2012
Valid Mobile Number	:	******8748
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	JH0060011
GSTIN	:	
Fees	:	Rs.120.00
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 3O mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	**5**
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.54

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC 0perator
60mm x 20 mm

Instantel

Event Report

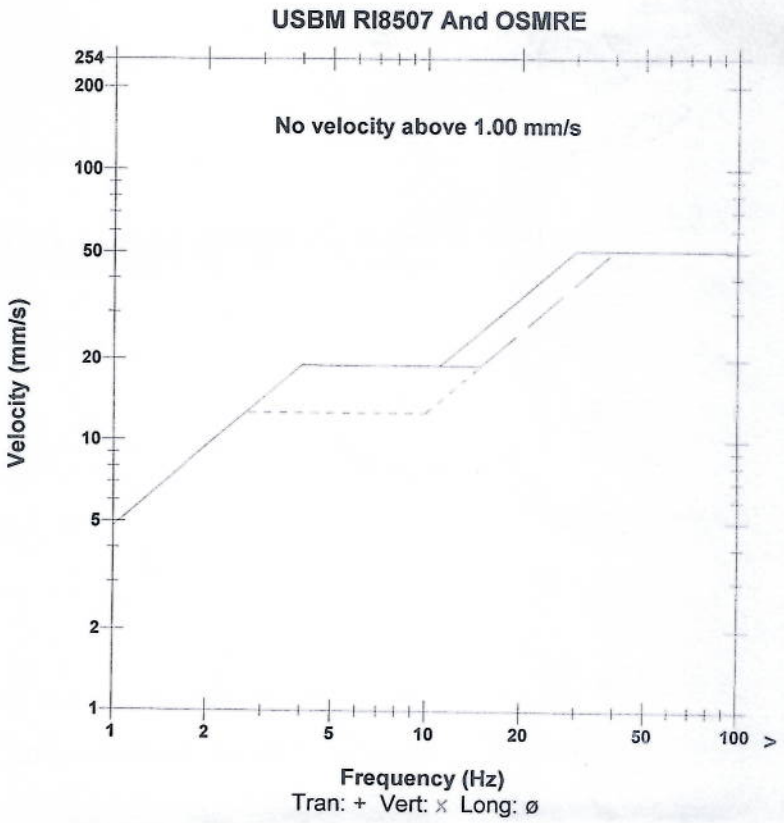
Date/Time	Long at 15:03:07 May 14, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

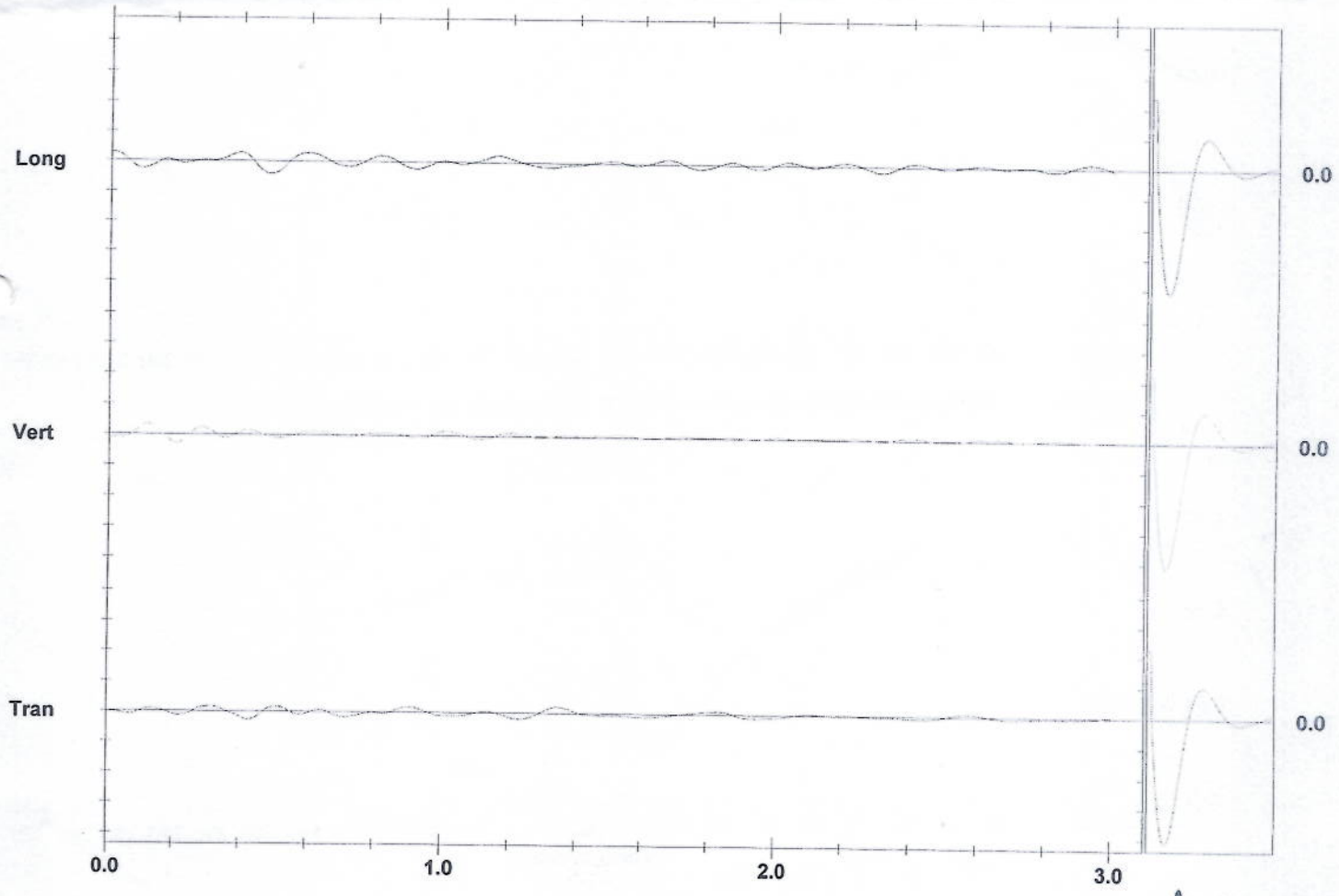
Serial Number	UM15576 V 10-89 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 7, 2023 by CIMFR Dhanbad
File Name	UM15576_20240514150307.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.567	0.701	0.843	mm/s
ZC Freq	4.7	5.2	4.7	Hz
Time (Rel. to Trig)	0.426	0.114	0.478	sec
Peak Acceleration	0.010	0.010	0.008	g
Peak Displacement	0.017	0.021	0.029	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	3.9	4.1	3.9	

Peak Vector Sum 0.883 mm/s at 0.488 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div

Sensor Check

for IDL Explosives Limited

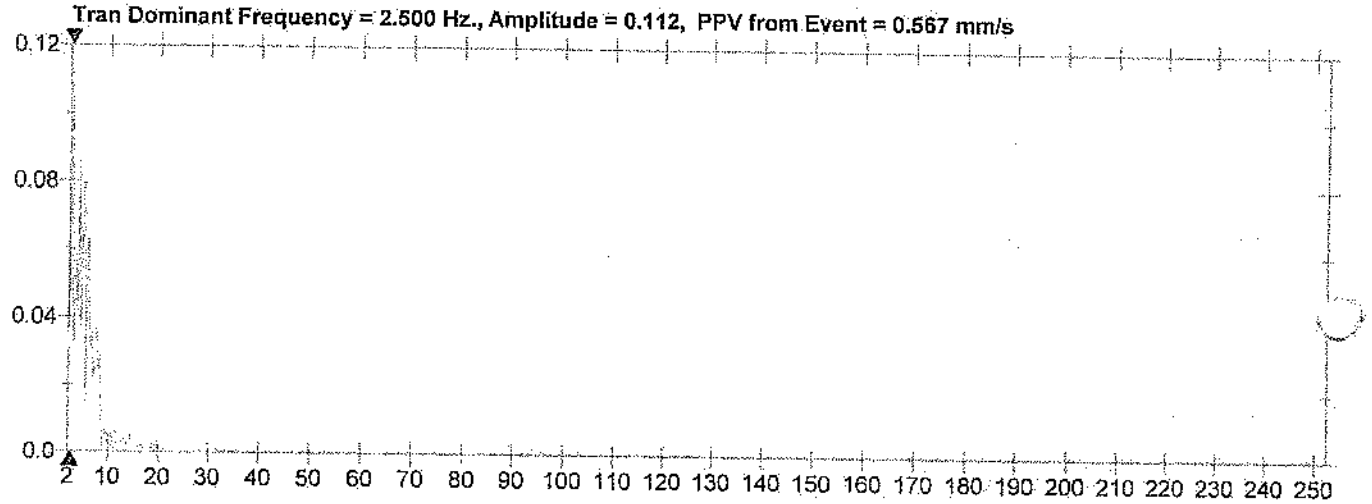
Instantel

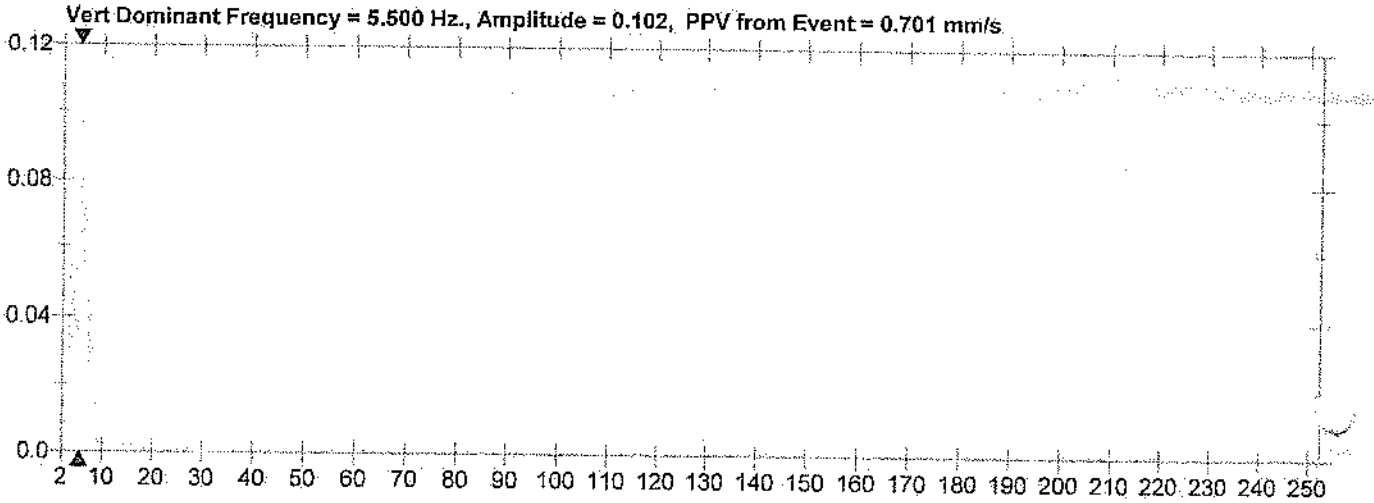
FFT Report

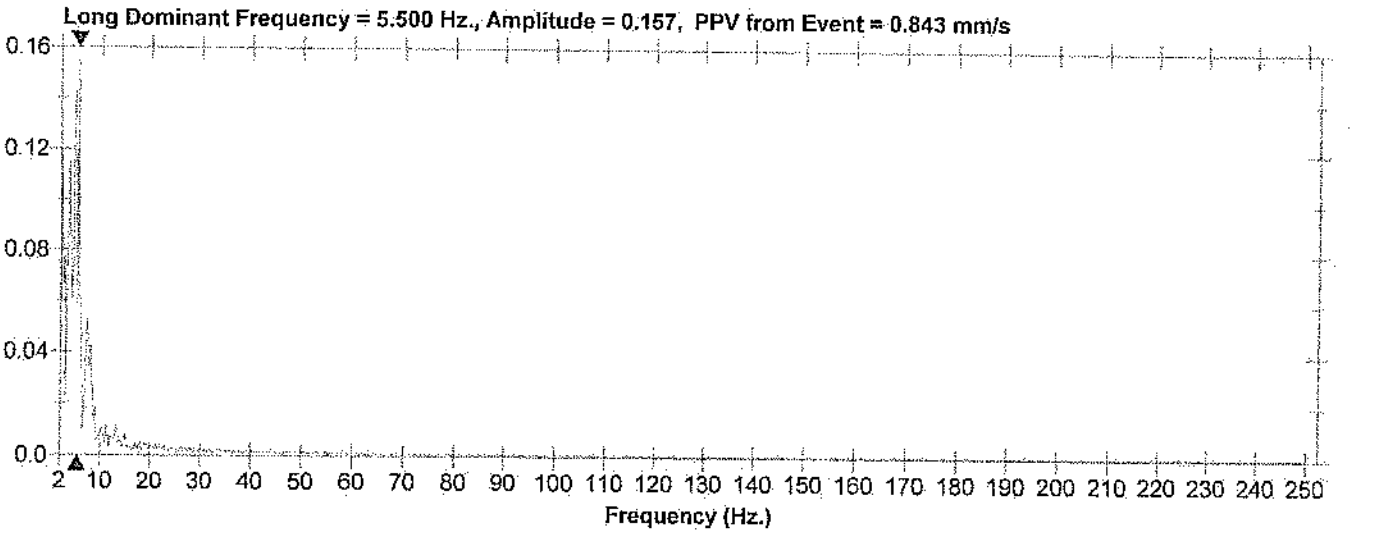
Date/Time	Long at 15:03:07 May 14, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-89 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 7, 2023 by CIMFR Dhanbad
File Name	UM15576_20240514150307.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:







Instantel

Event Report

Date/Time	Vert at 14:10:52 May 21, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

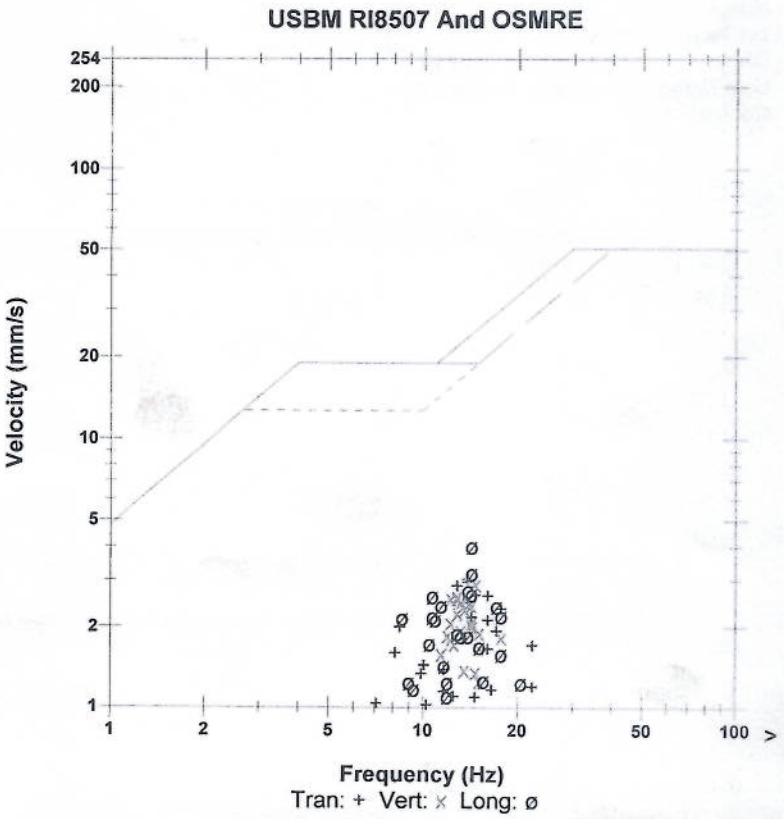
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20240521141052.IDFW

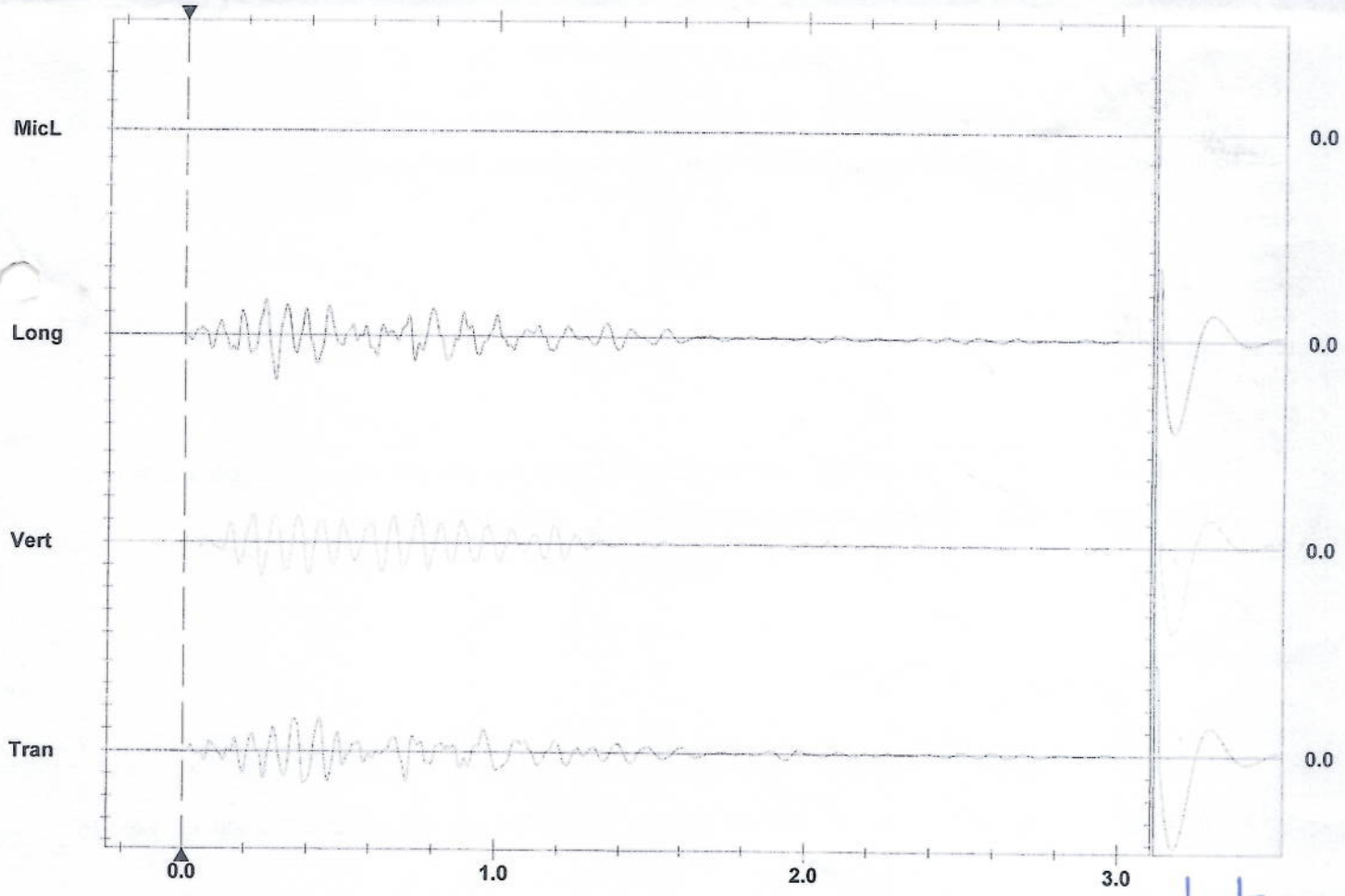
Notes
Location: KTM
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	>100 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	3.027	2.956	4.012	mm/s
ZC Freq	14	14	14	Hz
Time (Rel. to Trig)	0.439	0.253	0.293	sec
Peak Acceleration	0.072	0.046	0.086	g
Peak Displacement	0.038	0.033	0.040	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.3	Hz
Overswing Ratio	3.3	3.0	3.5	

Peak Vector Sum 5.190 mm/s at 0.293 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

Instantel

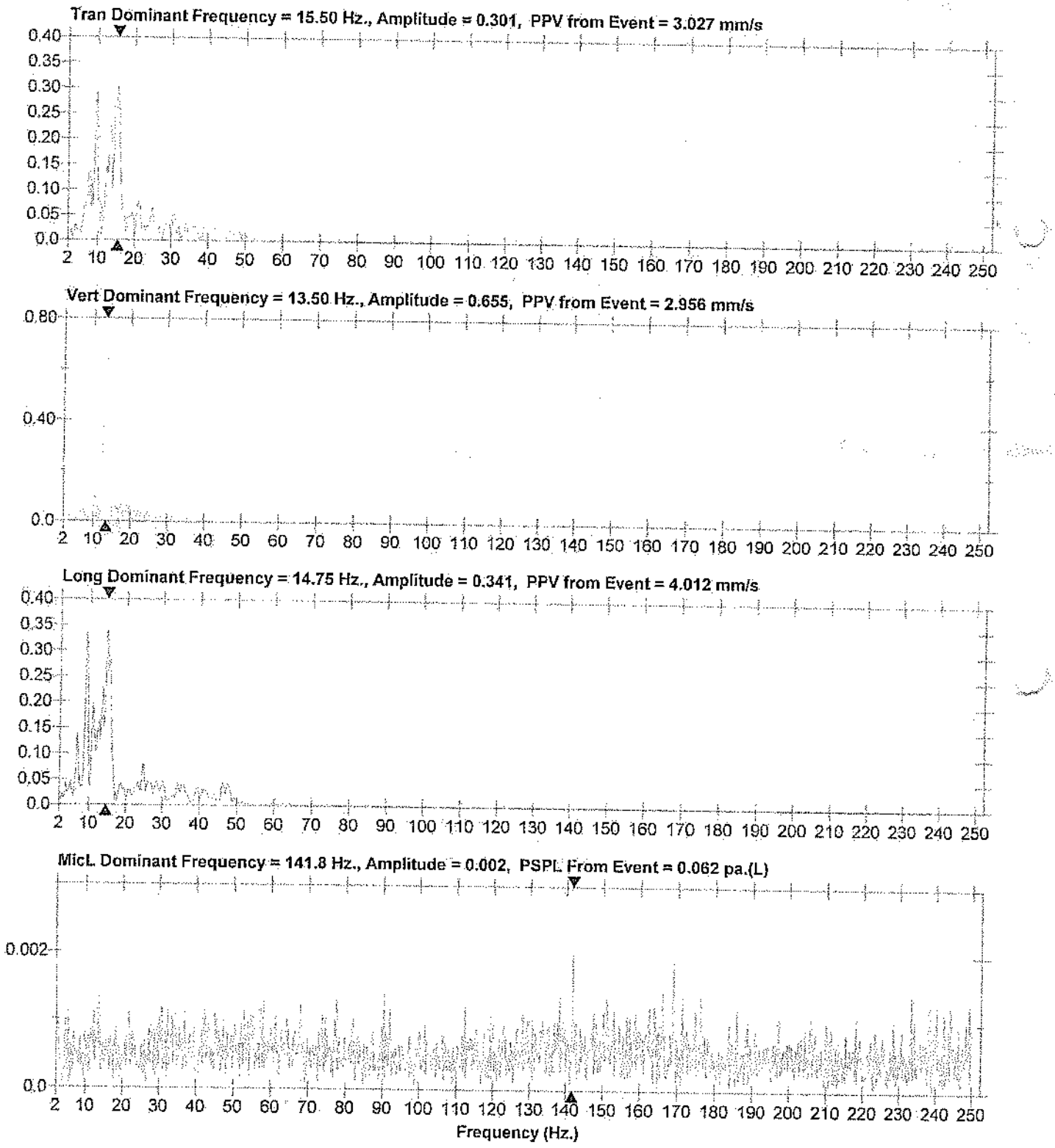
FFT Report

Date/Time	Vert at 14:10:52 May 21, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20240521141052.IDFW

Notes

Location: KTM
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

Date/Time	Long at 13:42:20 June 8, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

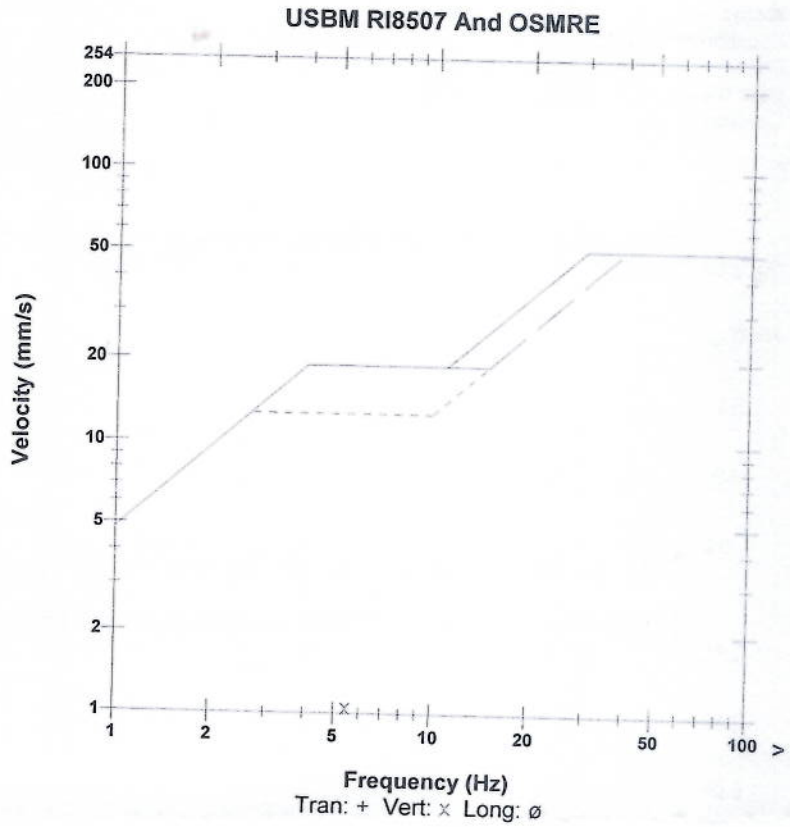
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20240608134220.IDFW

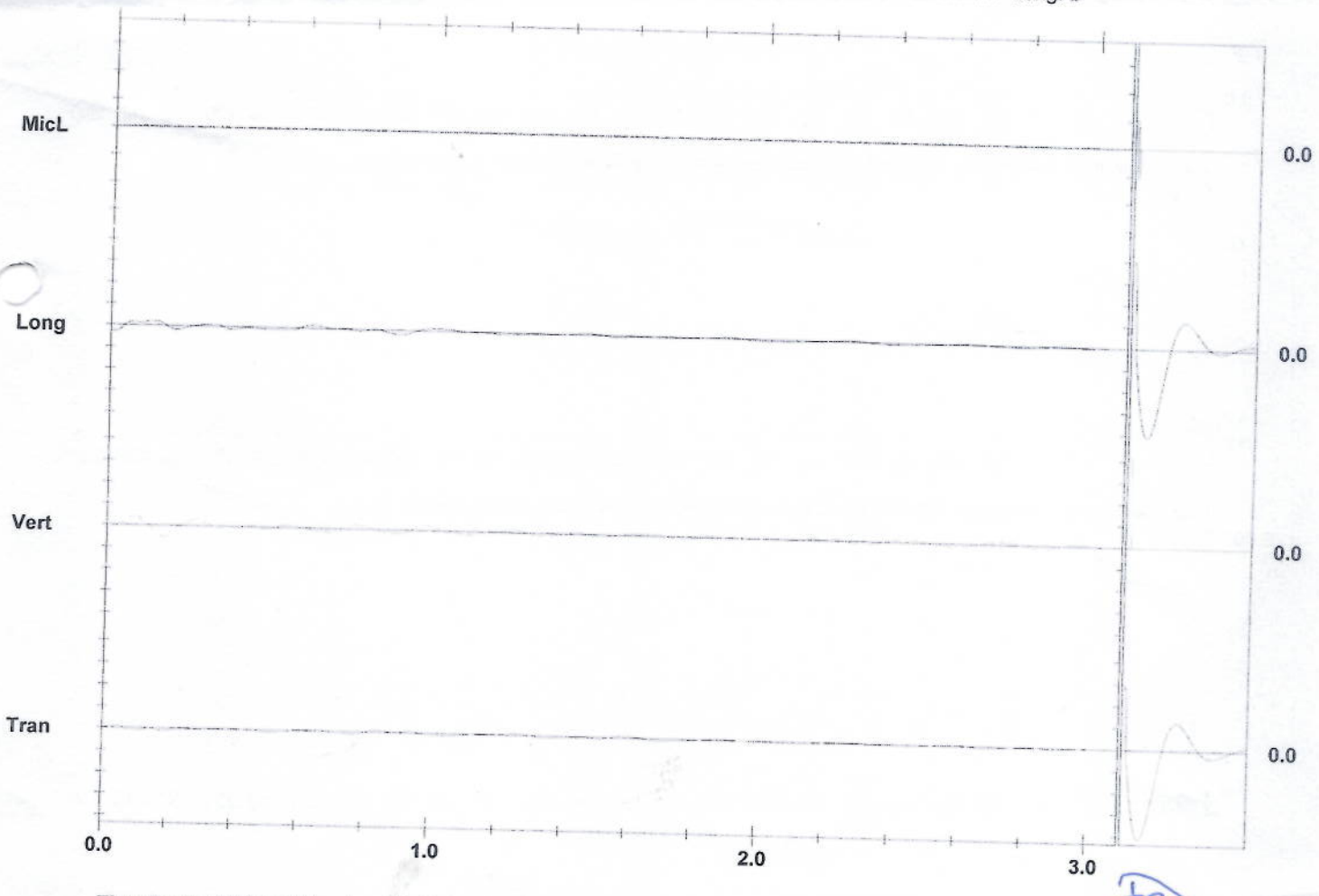
Notes
Location: KTM
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	>100 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.229	1.056	0.544	mm/s
ZC Freq	7.8	5.4	11	Hz
Time (Rel. to Trig)	0.189	0.176	0.006	sec
Peak Acceleration	0.005	0.007	0.005	g
Peak Displacement	0.008	0.027	0.017	mm
Sensor Check	Passed	Check	Passed	
Frequency	7.3	1024.0	7.5	Hz
Overswing Ratio	3.3	0.0	3.3	

Peak Vector Sum 1.069 mm/s at 0.176 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div

Sensor Check

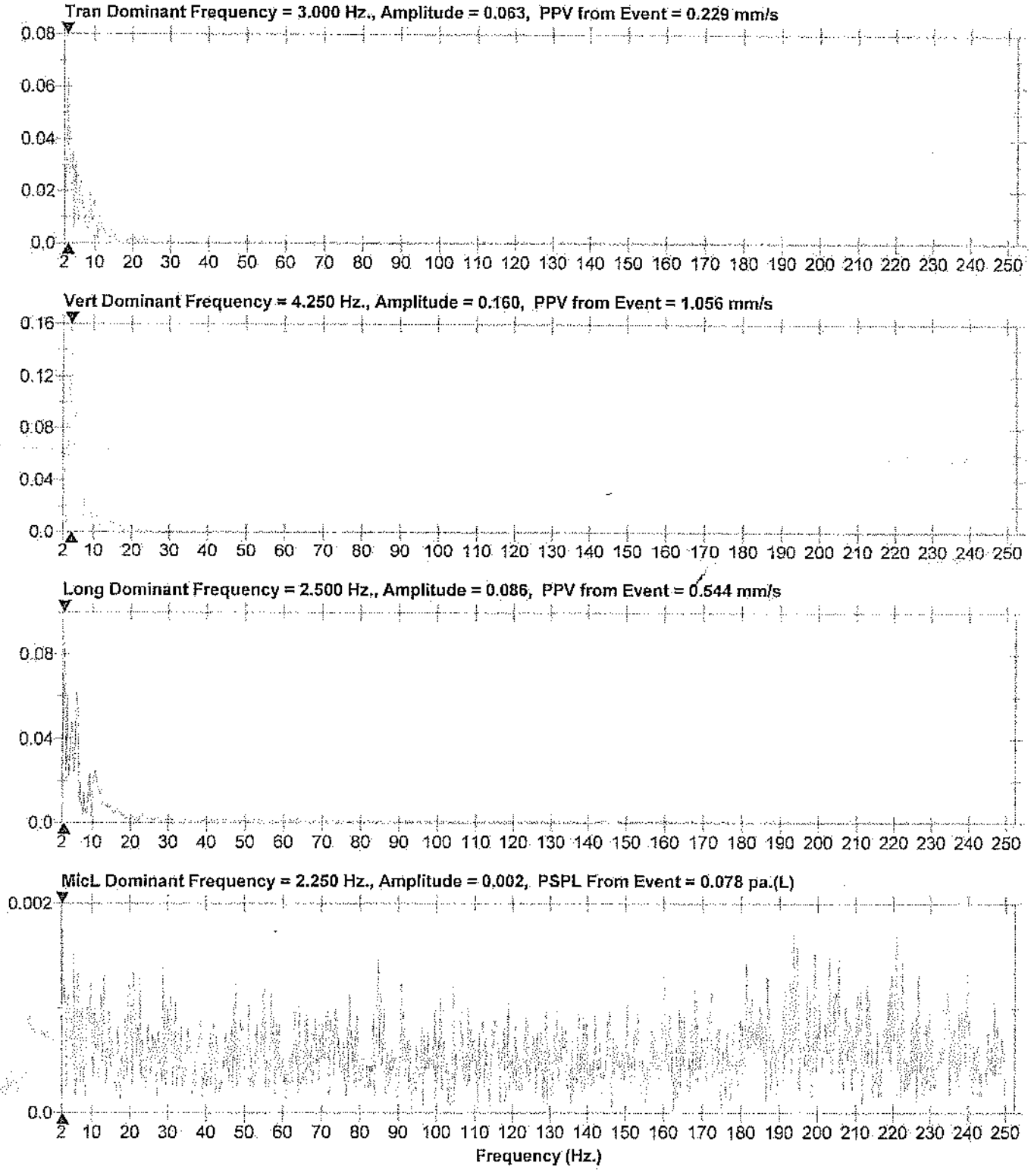
For IDL Explosives Ltd

Instantel

FFT Report

Date/Time	Long at 13:42:20 June 8, 2024	**Serial Number**	UM6253 V 10-76 Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM6253_20240608134220.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTM
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

Date/Time	Long at 14:16:38 June 26, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

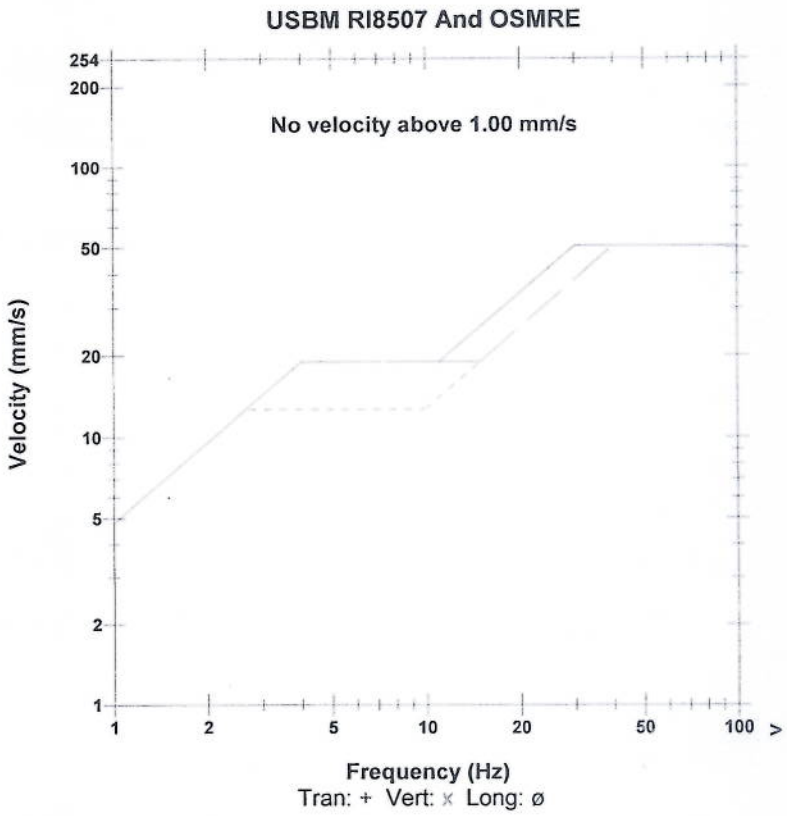
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240626141638.IDFW

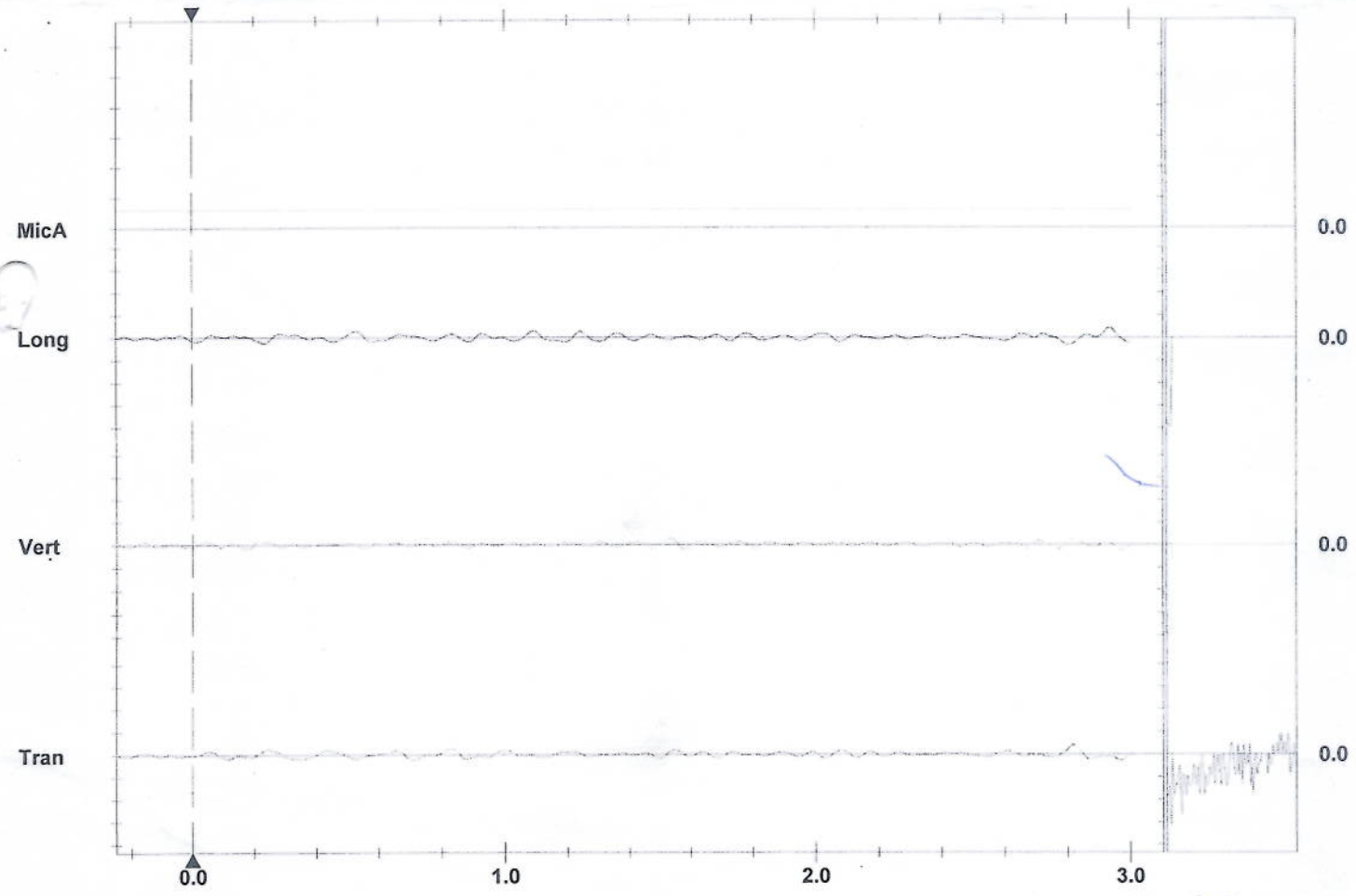
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	**LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.859	0.552	0.899	mm/s
ZC Freq	7.0	10.0	4.0	Hz
Time (Rel. to Trig)	2.817	1.538	2.934	sec
Peak Acceleration	0.010	0.010	0.012	g
Peak Displacement	0.022	0.010	0.021	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.2	

Peak Vector Sum 1.121 mm/s at 2.817 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

for IDL Explosives Limited

Instantel

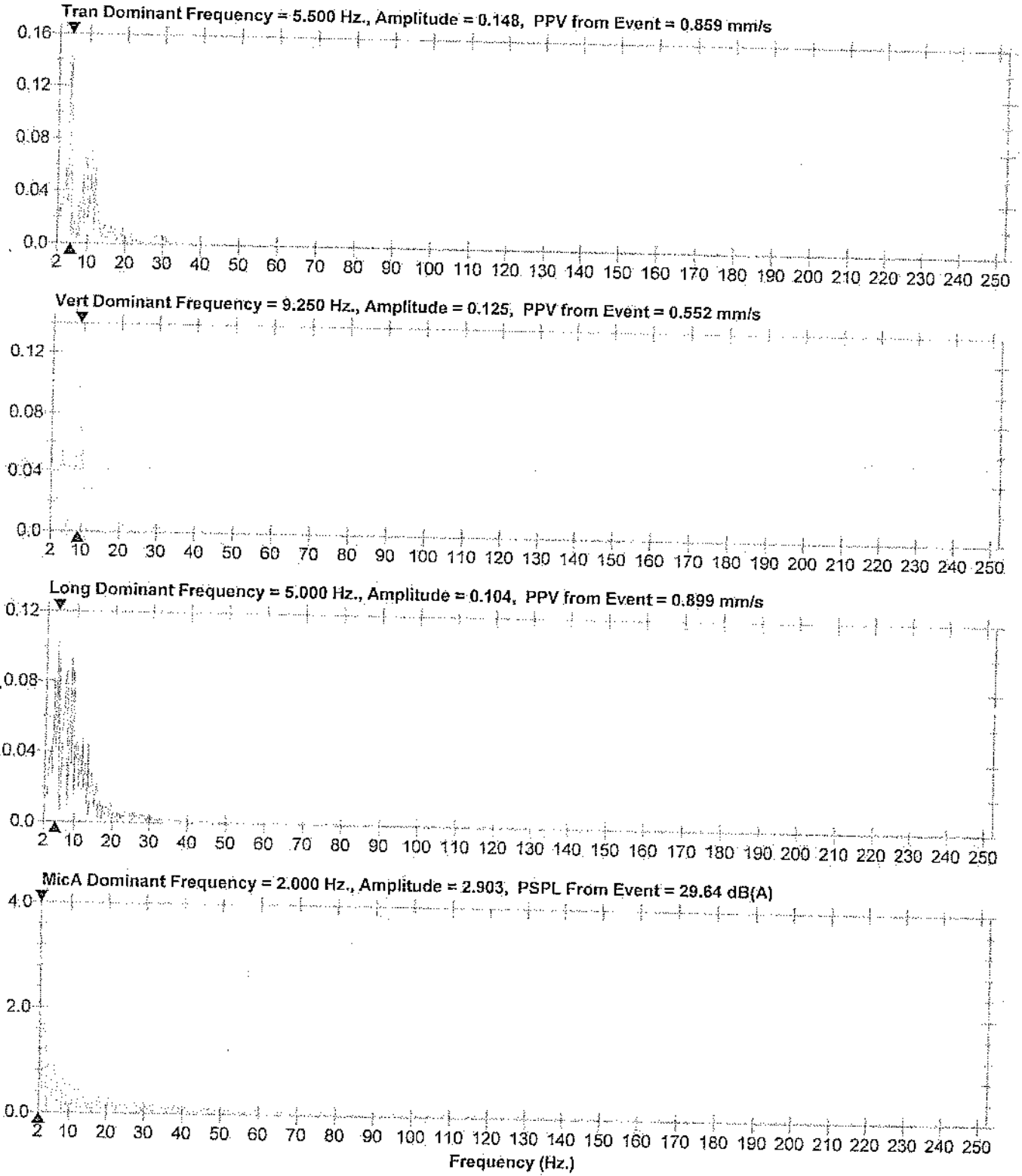
FFT Report

Date/Time	Long at 14:16:38 June 26, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240626141638.IDFW

Notes

Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

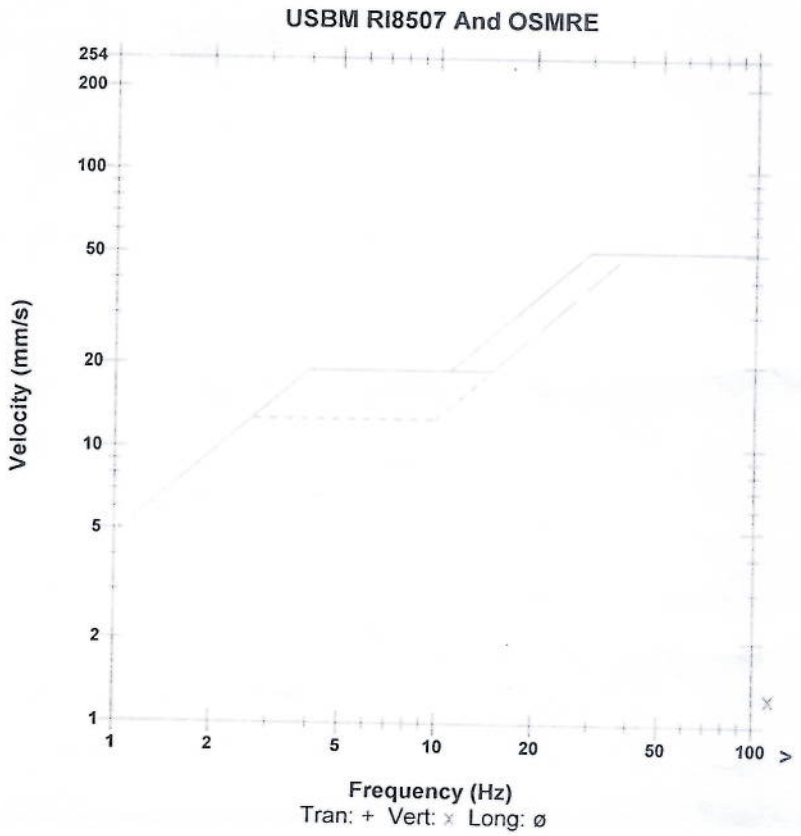
Date/Time	Vert at 13:31:30 July 9, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

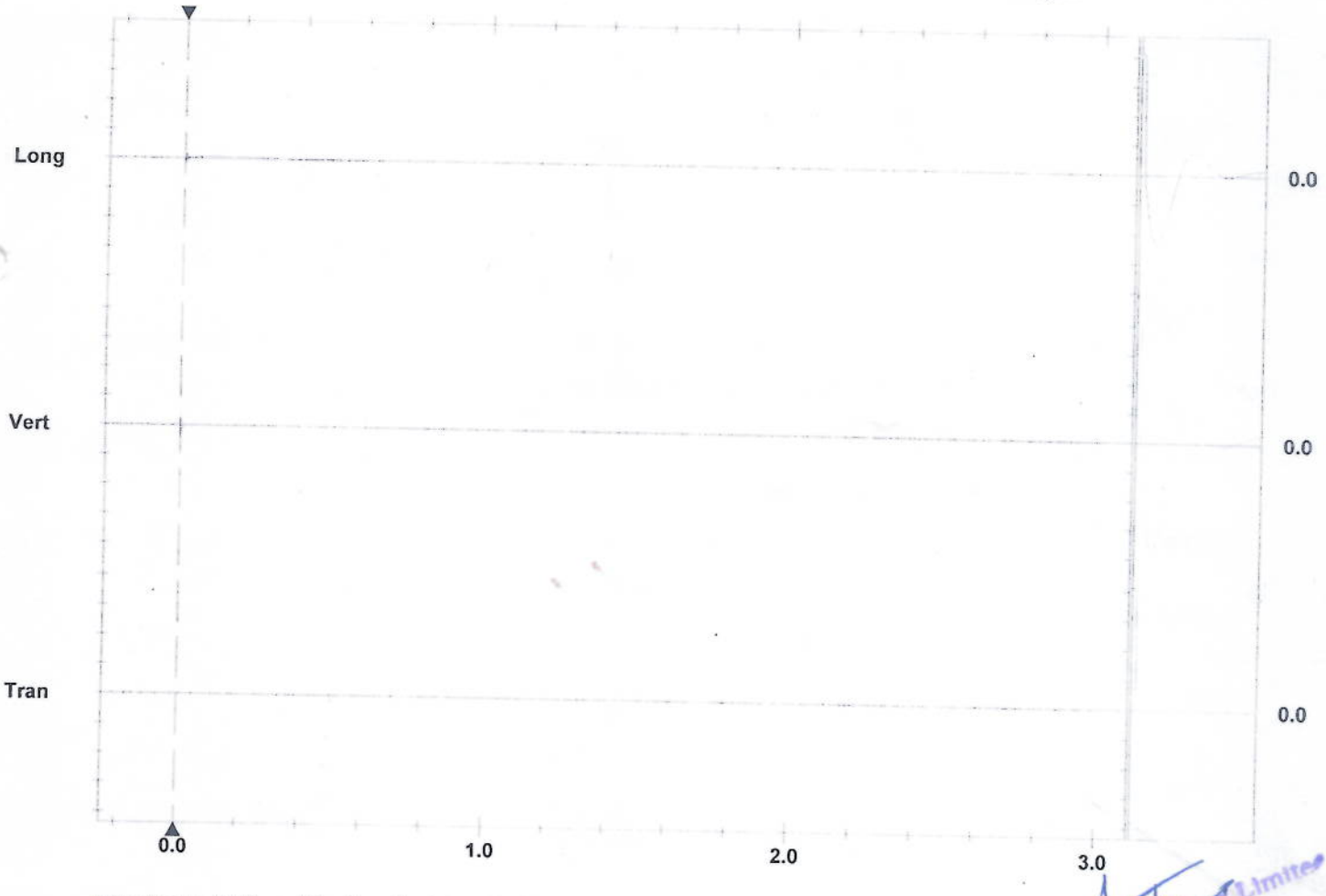
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20240709133130.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.039	1.269	0.363	mm/s
ZC Freq	>100	>100	>100	Hz
Time (Rel. to Trig)	-0.014	0.000	0.005	sec
Peak Acceleration	0.006	0.178	0.067	g
Peak Displacement	0.000	0.001	0.012	mm
Sensor Check	Check	Passed	Check	
Frequency	1024.0	7.7	7.7	Hz
Overswing Ratio	0.0	3.0	3.0	

Peak Vector Sum 1.272 mm/s at 0.000 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

for IDL Explosives Limited

Instantel

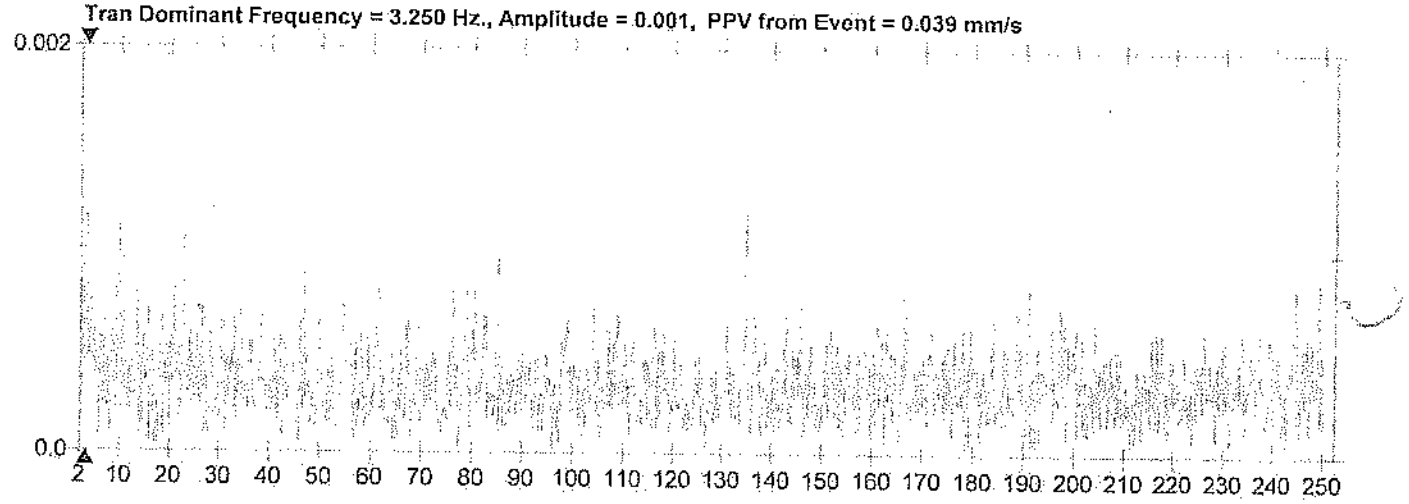
FFT Report

Date/Time	Vert at 13:31:30 July 9, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

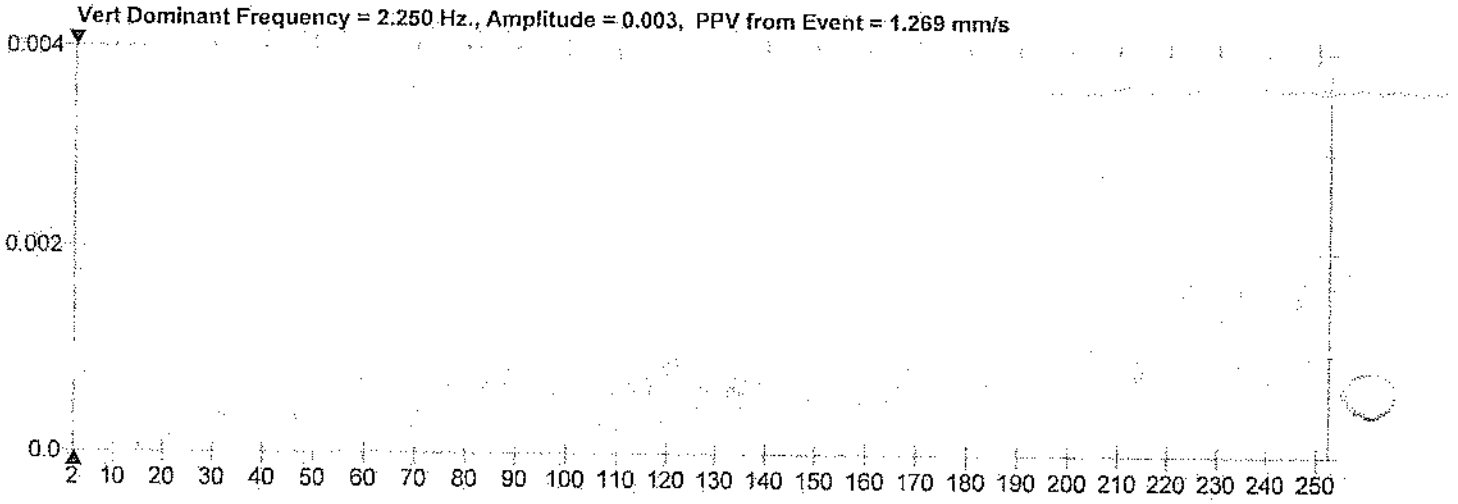
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20240709133130.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

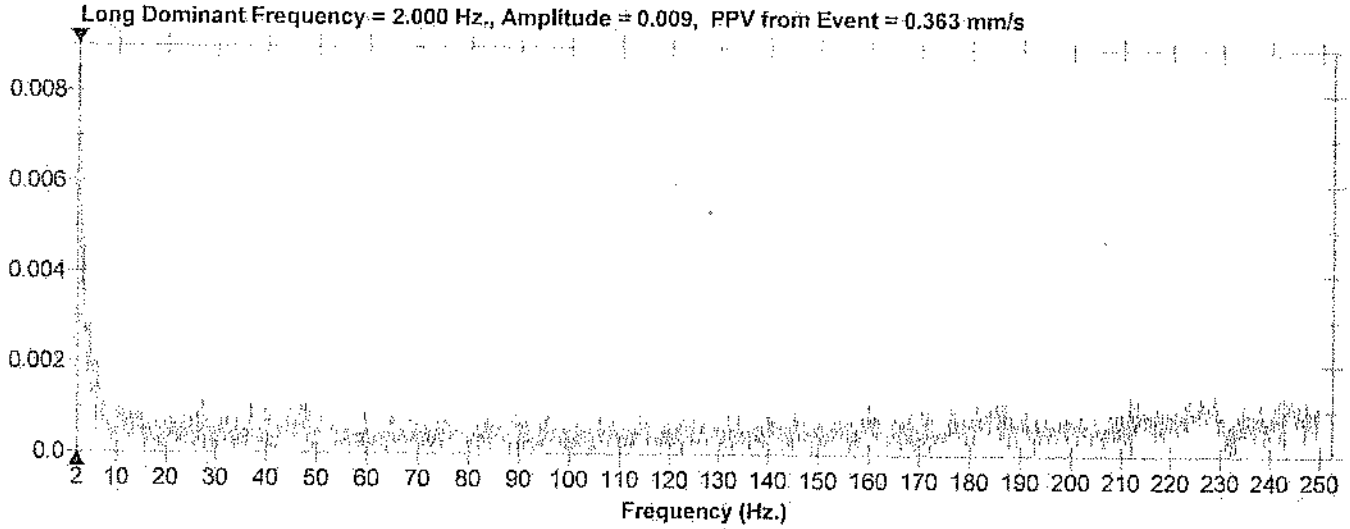
Tran Dominant Frequency = 3.250 Hz., Amplitude = 0.001, PPV from Event = 0.039 mm/s



Vert Dominant Frequency = 2.250 Hz., Amplitude = 0.003, PPV from Event = 1.269 mm/s



Long Dominant Frequency = 2.000 Hz., Amplitude = 0.009, PPV from Event = 0.363 mm/s



Instantel

Event Report

Date/Time	Long at 13:57:24 July 26, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240726135724.IDFW

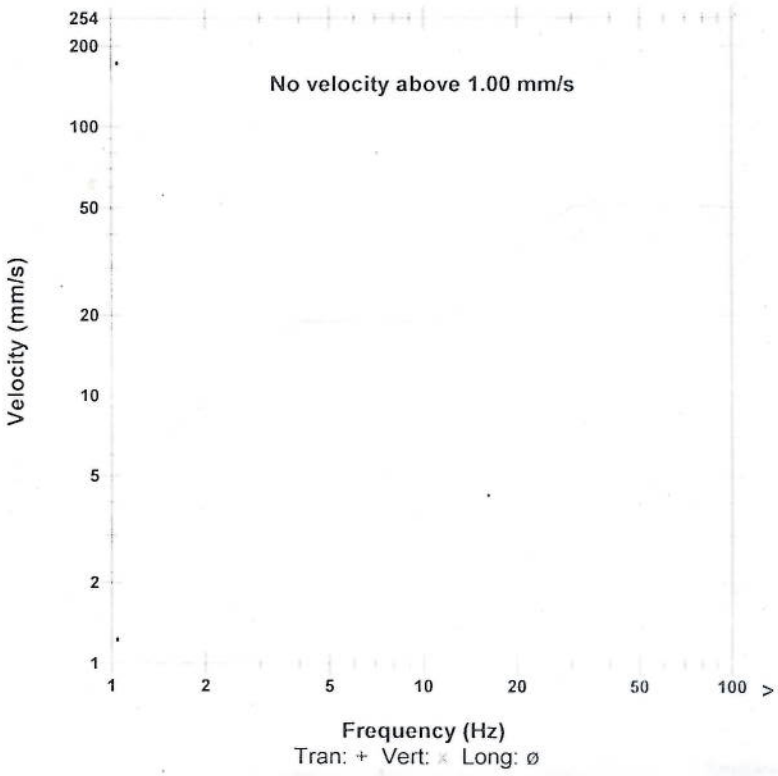
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

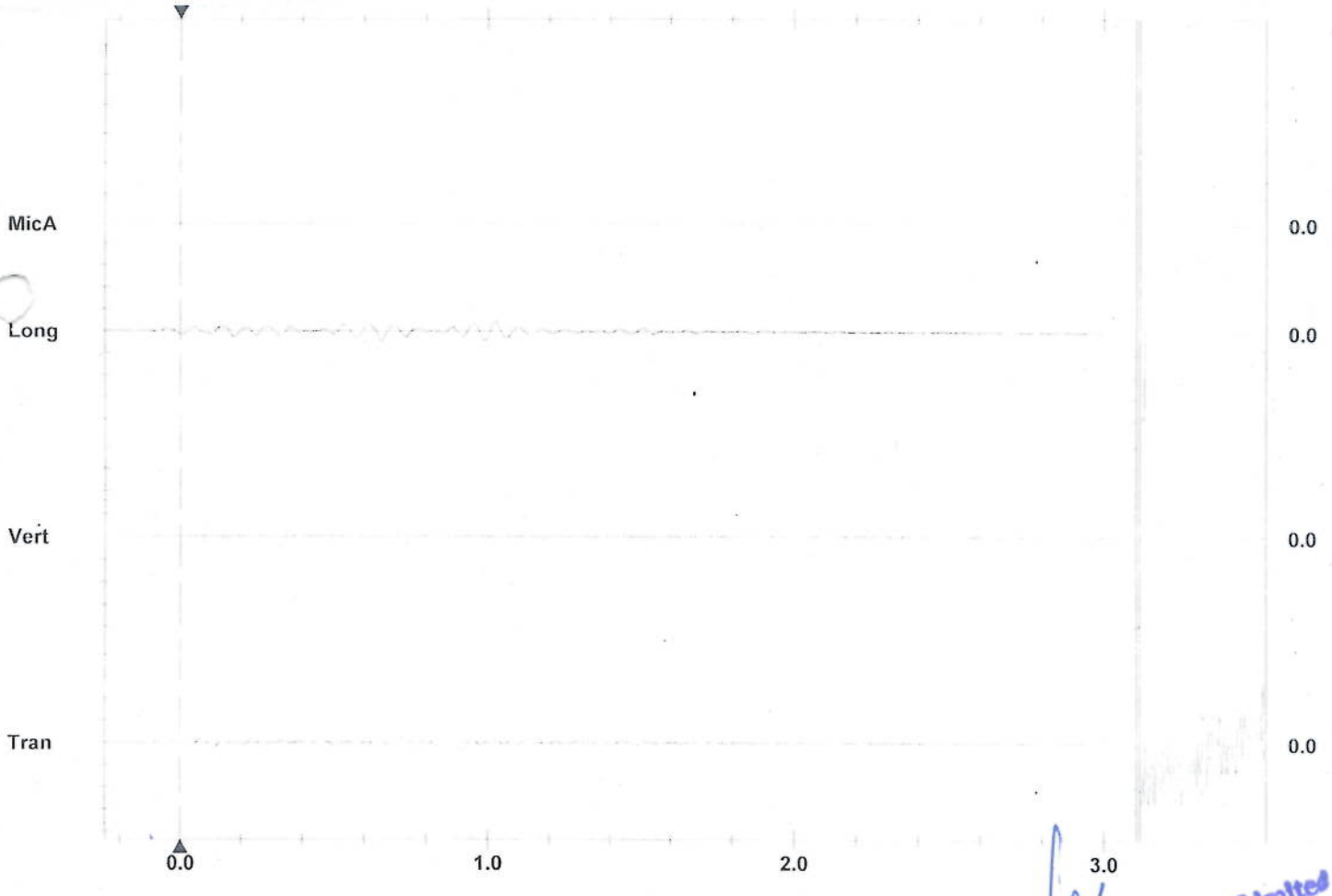
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.765	0.631	0.946	mm/s
ZC Freq	15.5	16.8	14.6	Hz
Time (Rel. to Trig)	0.732	0.690	1.023	sec
Peak Acceleration	0.013	0.013	0.015	g
Peak Displacement	0.008	0.006	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 1.137 mm/s at 0.658 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

Instantel

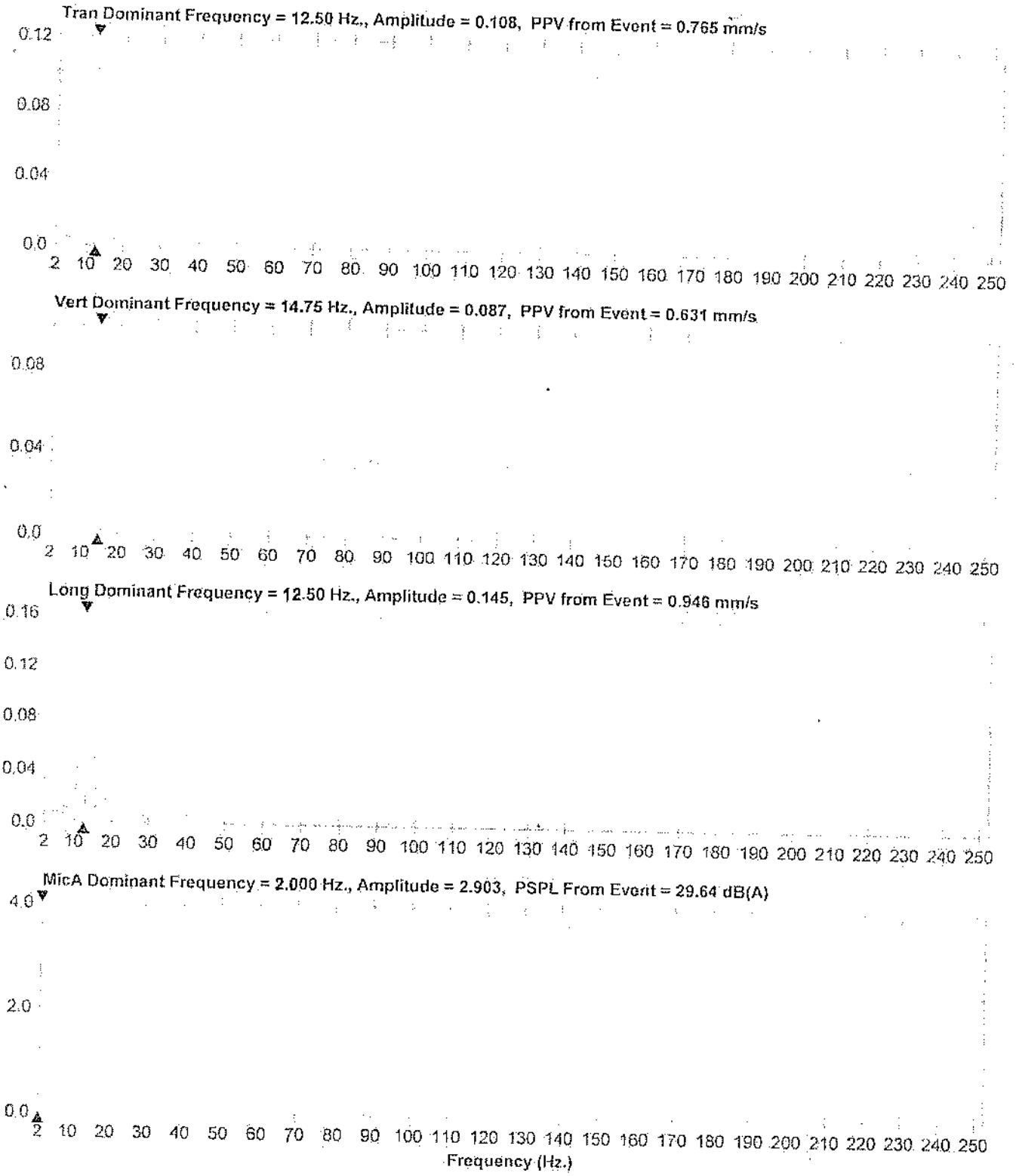
FFT Report

Date/Time	Long at 13:57:24 July 26, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240726135724.IDFW

Notes

Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

KTM. RL - 636

Date/Time	Vert at 13:53:25 August 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

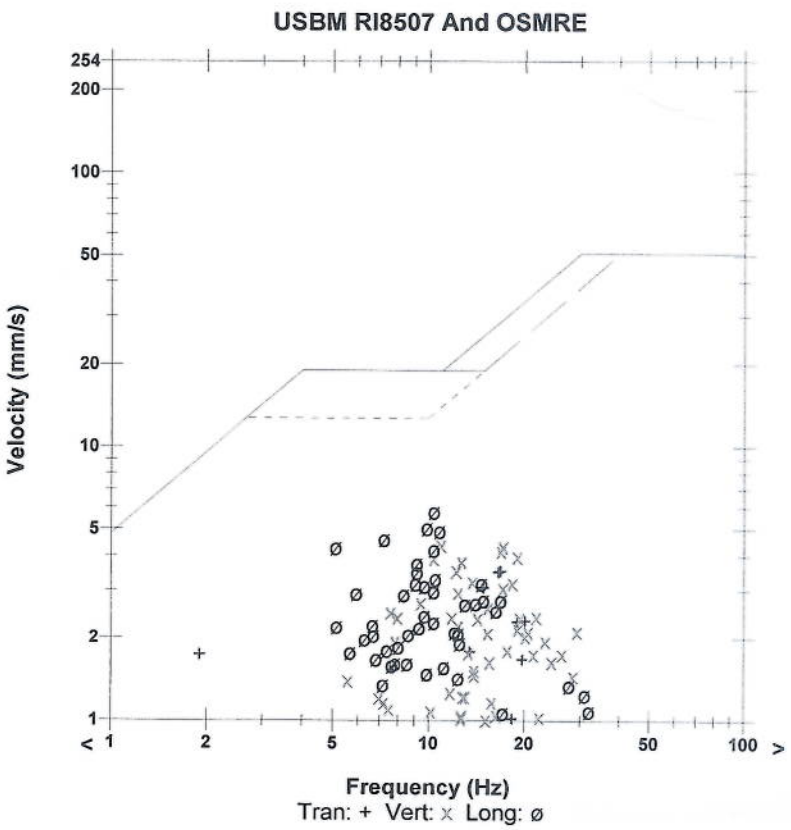
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240809135325.IDFW

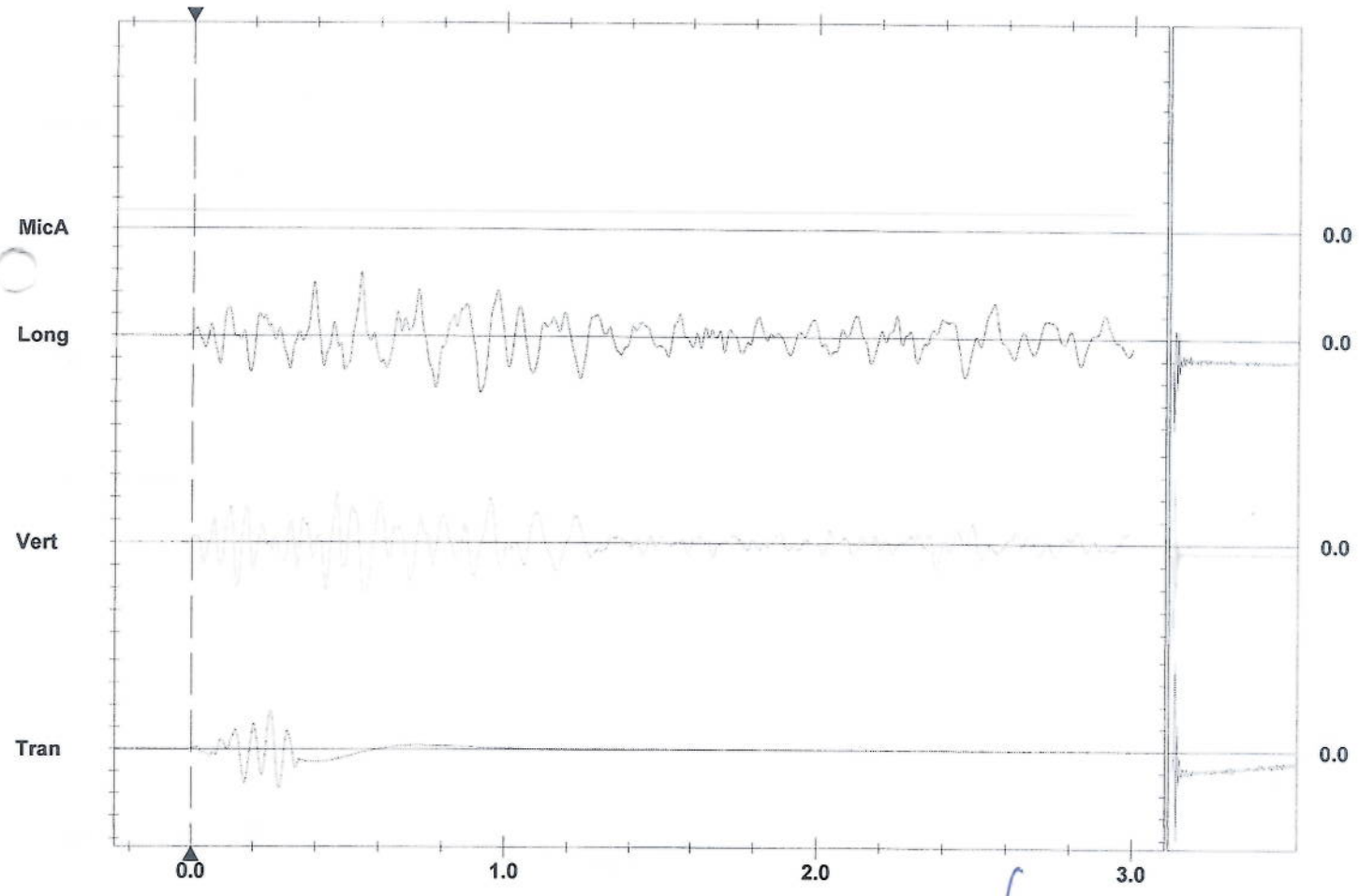
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	**LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	3.523	4.398	5.801	mm/s
ZC Freq	16.8	10.9	10.3	Hz
Time (Rel. to Trig)	0.284	0.554	0.540	sec
Peak Acceleration	0.061	0.100	0.049	g
Peak Displacement	0.102	0.064	0.078	mm
Sensor Check	Check	Passed	Passed	
Frequency	7.9	7.3	7.3	Hz
Overswing Ratio	1.7	4.2	4.1	

Peak Vector Sum 6.072 mm/s at 0.541 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶—— ——◀

Sensor Check

for IDL Explosives Limited

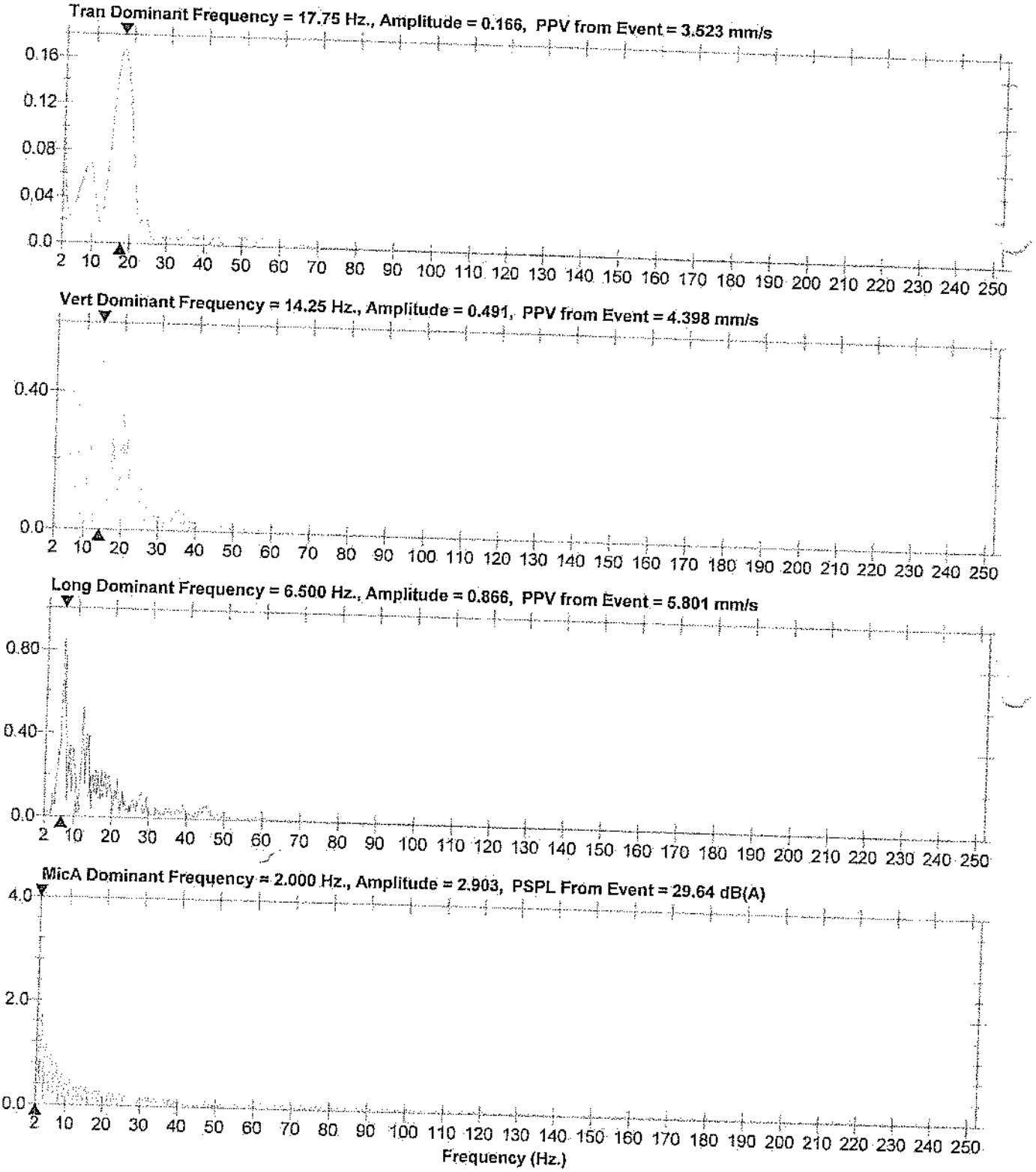
Instantel

FFT Report

Date/Time	Vert at 13:53:25 August 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240809135325.IDFW

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

Date/Time	Long at 13:51:55 August 19, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

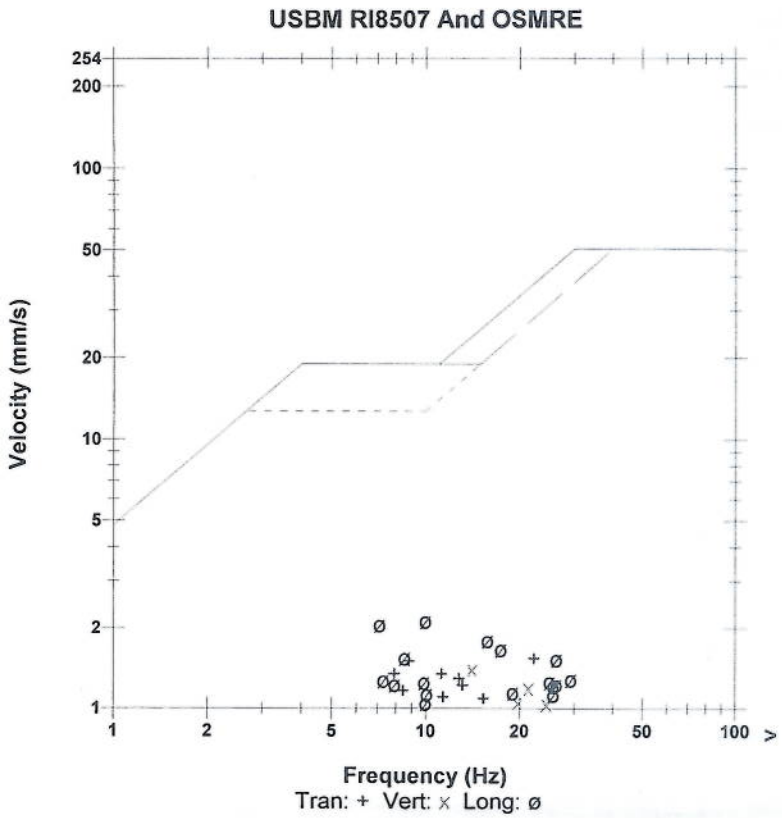
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20240819135155.IDFW

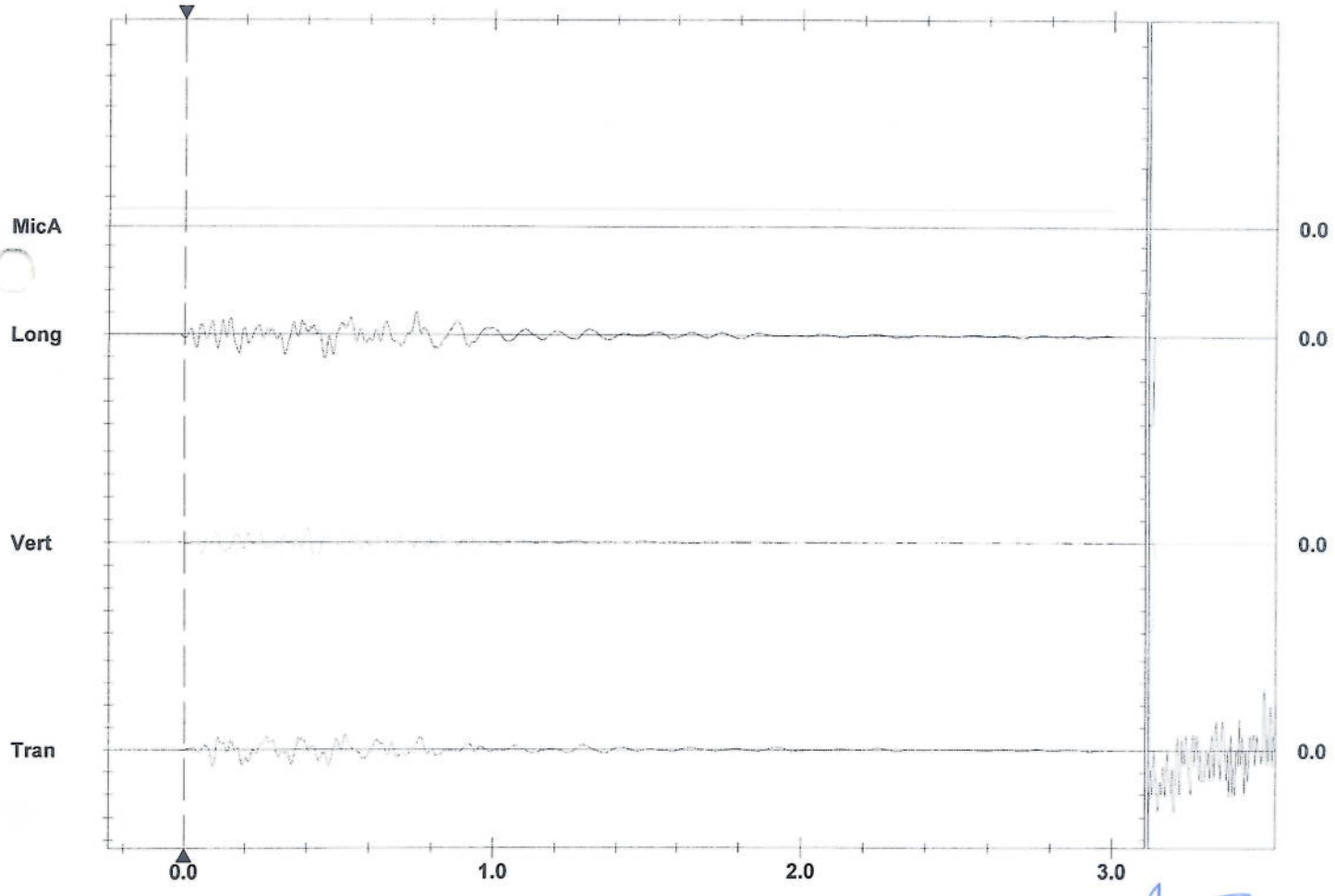
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	**LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.537	1.403	2.128	mm/s
ZC Freq	22	14.0	9.9	Hz
Time (Rel. to Trig)	0.095	0.427	0.458	sec
Peak Acceleration	0.033	0.031	0.049	g
Peak Displacement	0.021	0.017	0.029	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.1	

Peak Vector Sum 2.213 mm/s at 0.458 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

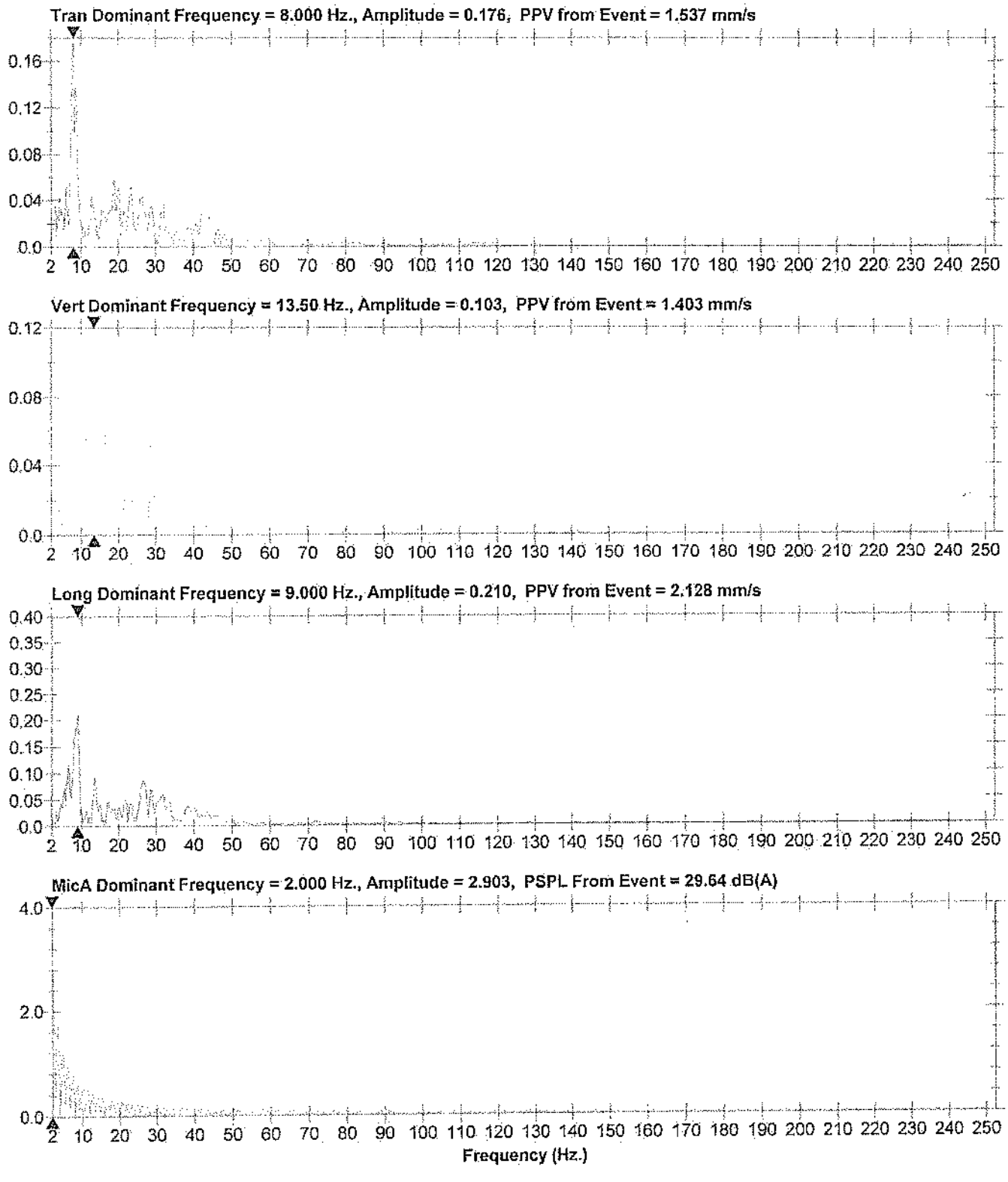
Sensor Check
for IDL Explosives Limited

Instantel

FFT Report

Date/Time	Long at 13:51:55 August 19, 2024	**Serial Number**	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM15576_20240819135155.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

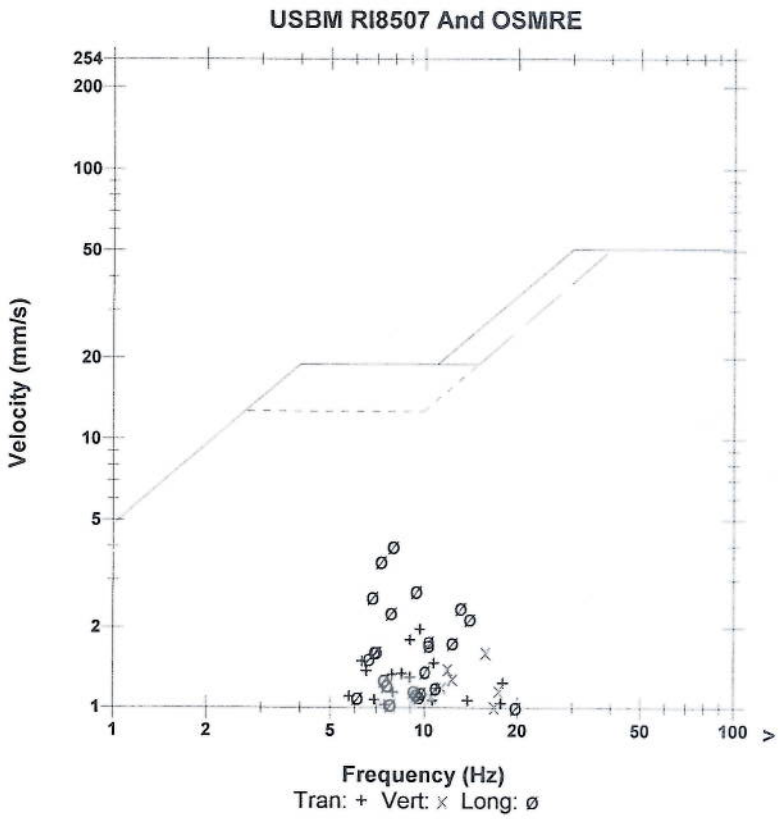
Date/Time	Vert at 13:33:38 September 13, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

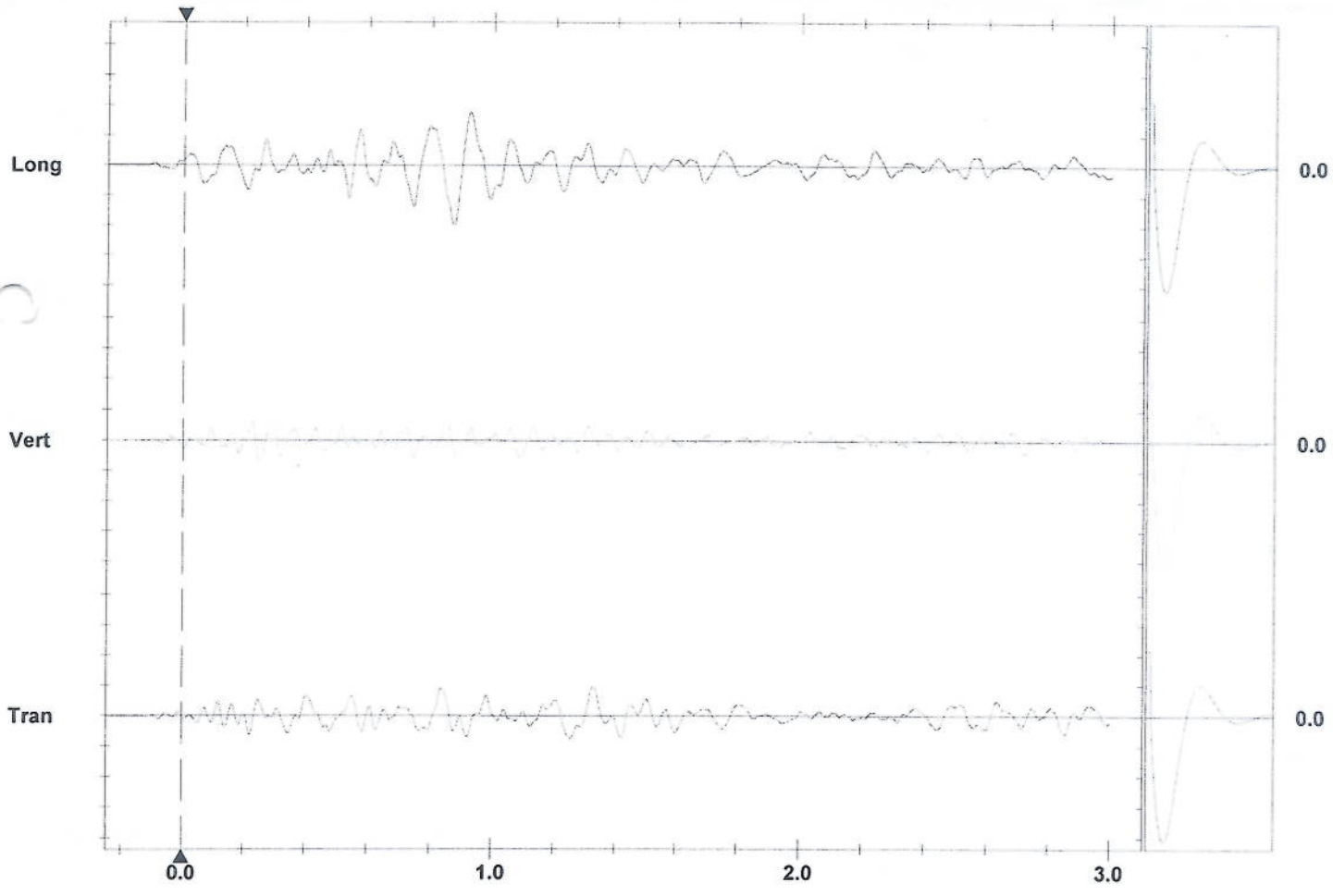
Serial Number	UM20055 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20240913133338.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

	Tran	Vert	Long	
PPV	1.970	1.616	4.012	mm/s
ZC Freq	9.7	15.8	7.9	Hz
Time (Rel. to Trig)	1.331	0.251	0.873	sec
Peak Acceleration	0.025	0.030	0.035	g
Peak Displacement	0.034	0.016	0.075	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	4.1	4.5	4.5	

Peak Vector Sum 4.161 mm/s at 0.875 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶—— ——◀

Sensor Check

For IDL Explosives Limited

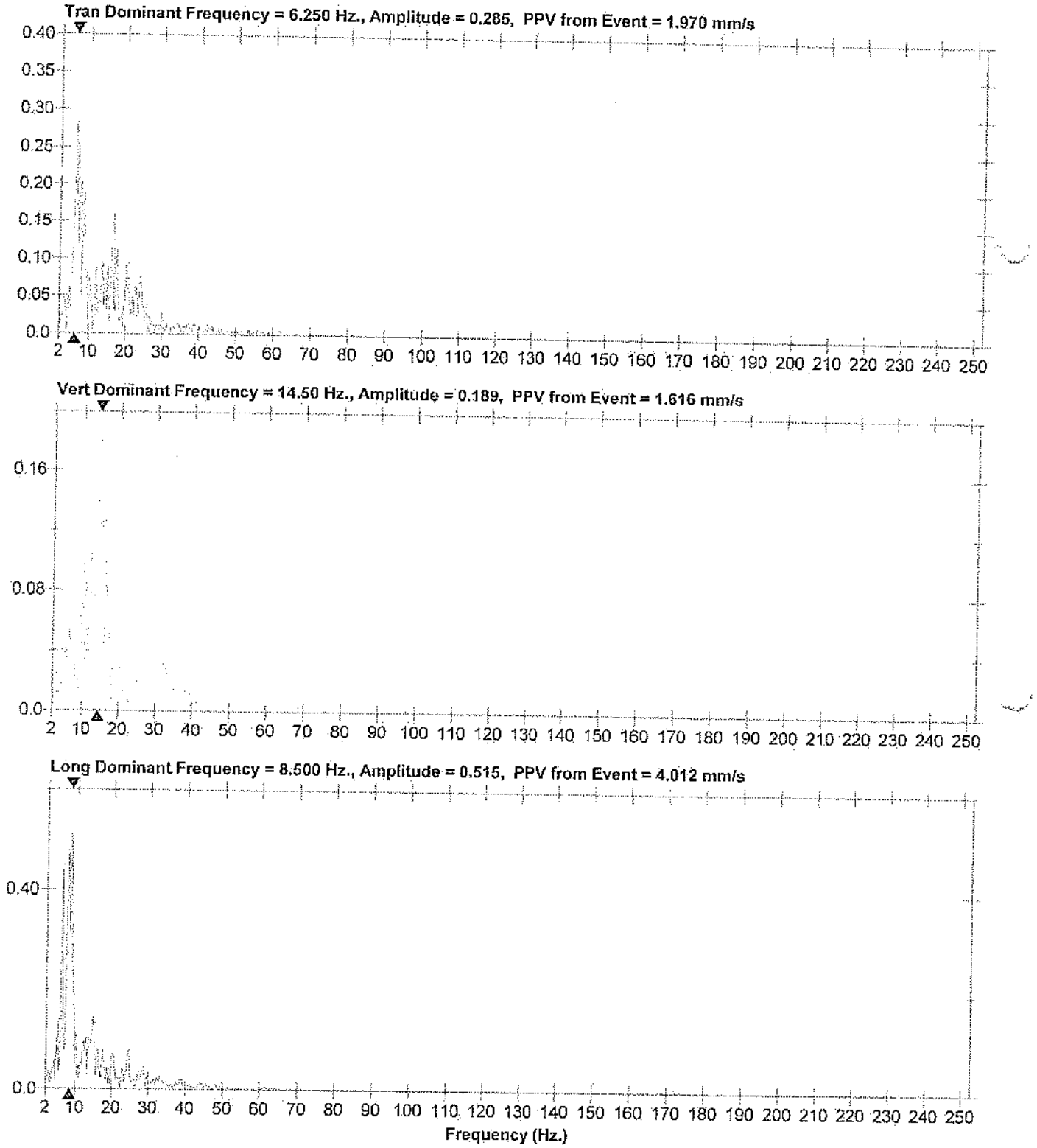
Instantel

FFT Report

Date/Time	Vert at 13:33:38 September 13, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM20055 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20240913133338.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:



Event Report

Date/Time	Tran at 13:47:21 September 25, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM21106 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20240925134721.IDFW

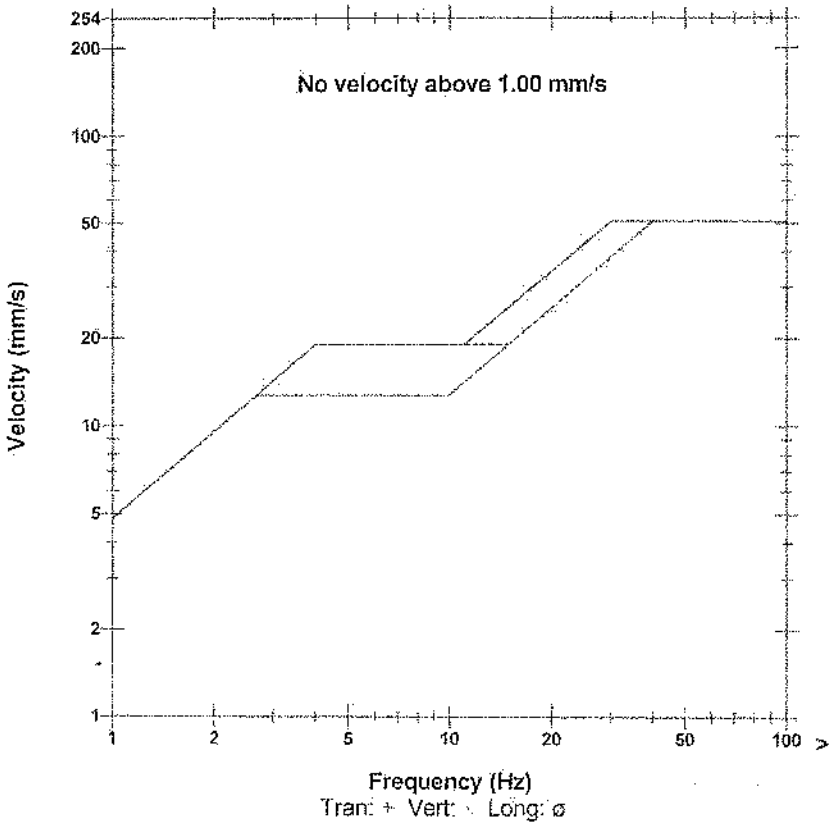
Notes
Location:
Client:
User Name:
General:

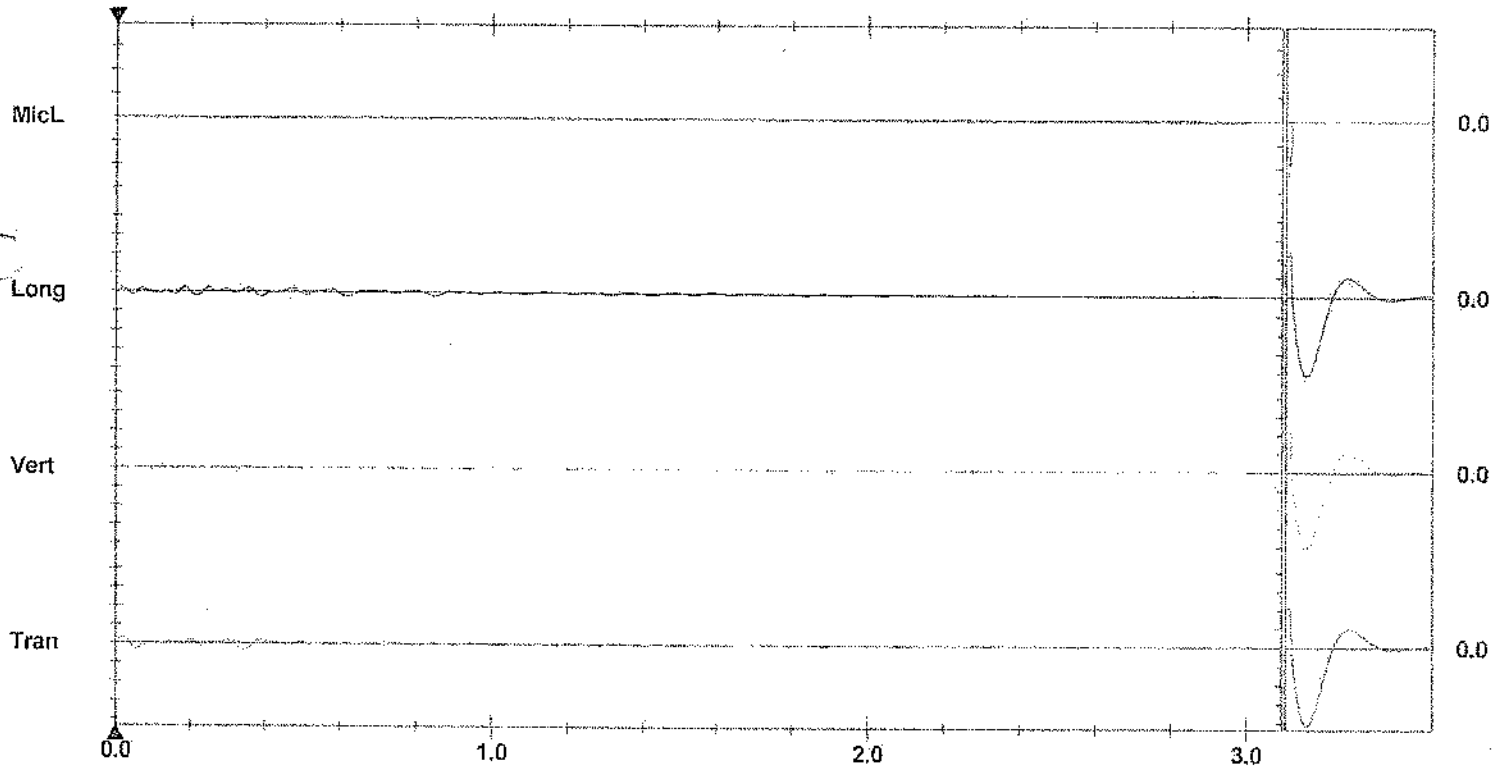
Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	<1.0 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.694	0.418	0.536	mm/s
ZC Freq	N/A	14.9	6.8	Hz
Time (Rel. to Trig)	0.019	0.293	0.388	sec
Peak Acceleration	0.023	0.016	0.020	g
Peak Displacement	0.010	0.004	0.008	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.2	4.0	4.0	

Peak Vector Sum 0.755 mm/s at 0.019 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger =

Sensor Check

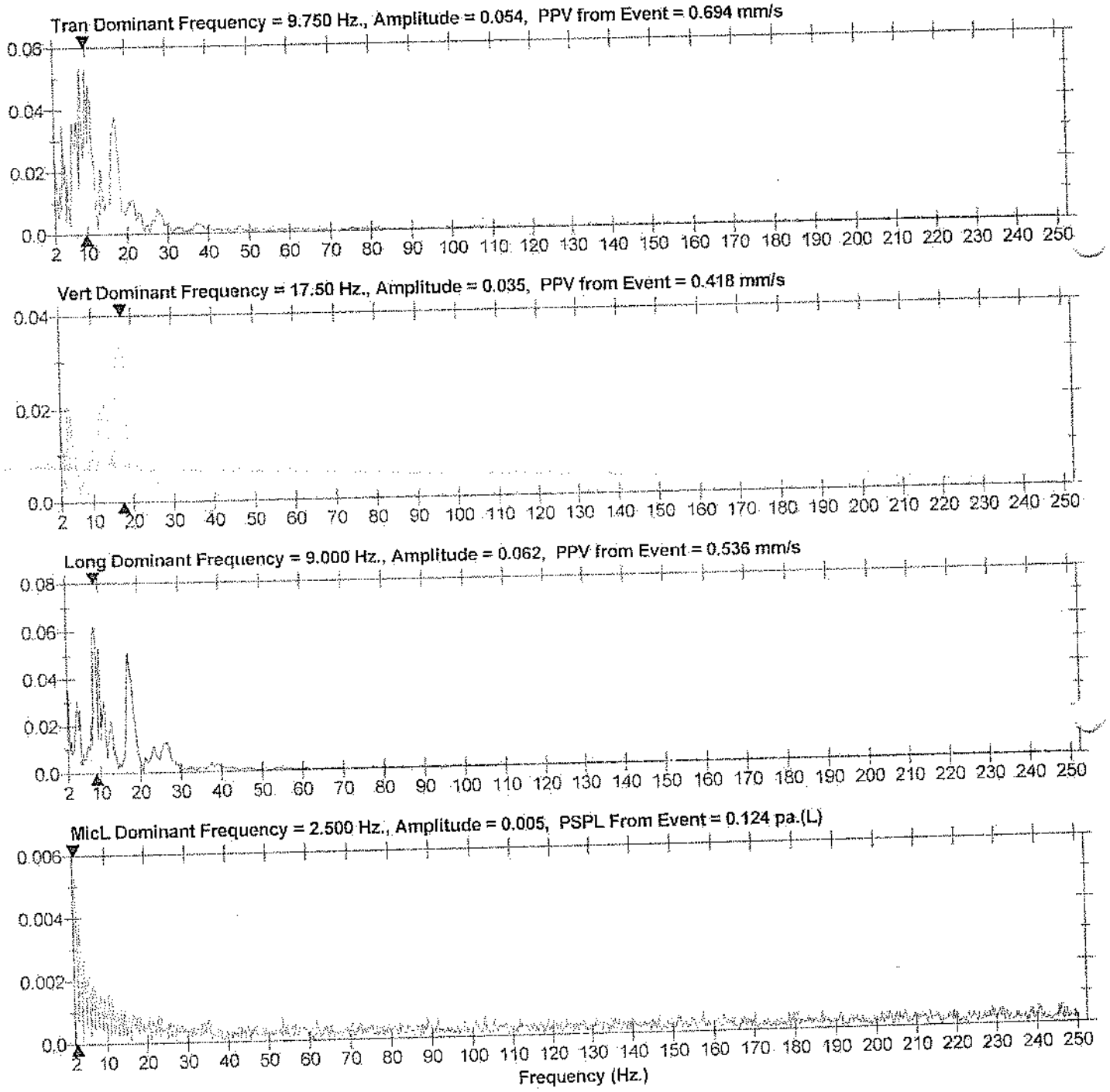
Instantel

FFT Report

Date/Time	Tran at 13:47:21 September 25, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM21106 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20240925134721.IDFW

Notes
Location:
Client:
User Name:
General:



Instantel

Event Report

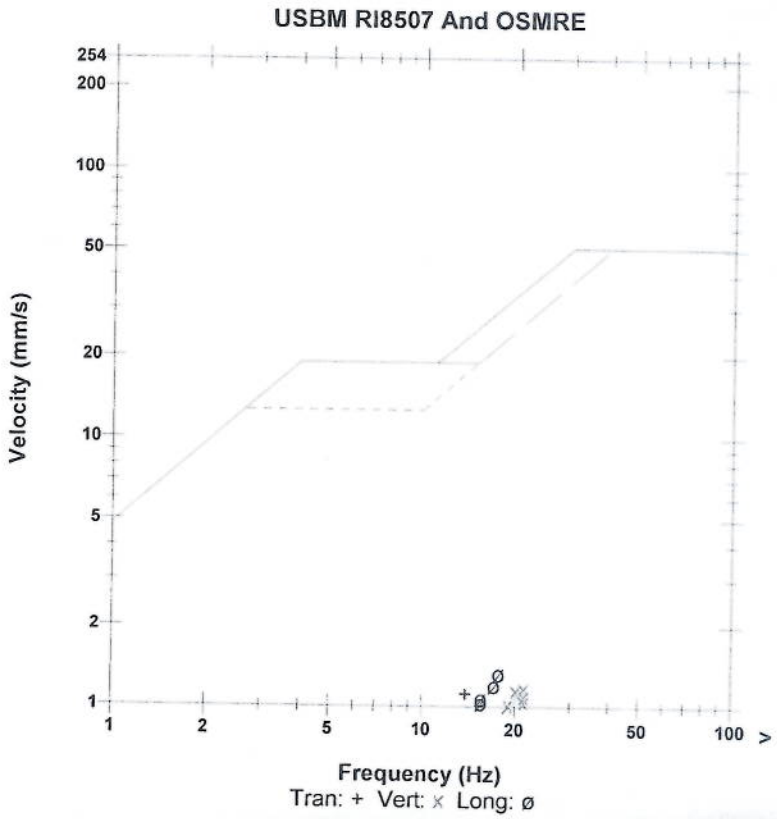
Date/Time	Vert at 13:50:10 October 10, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

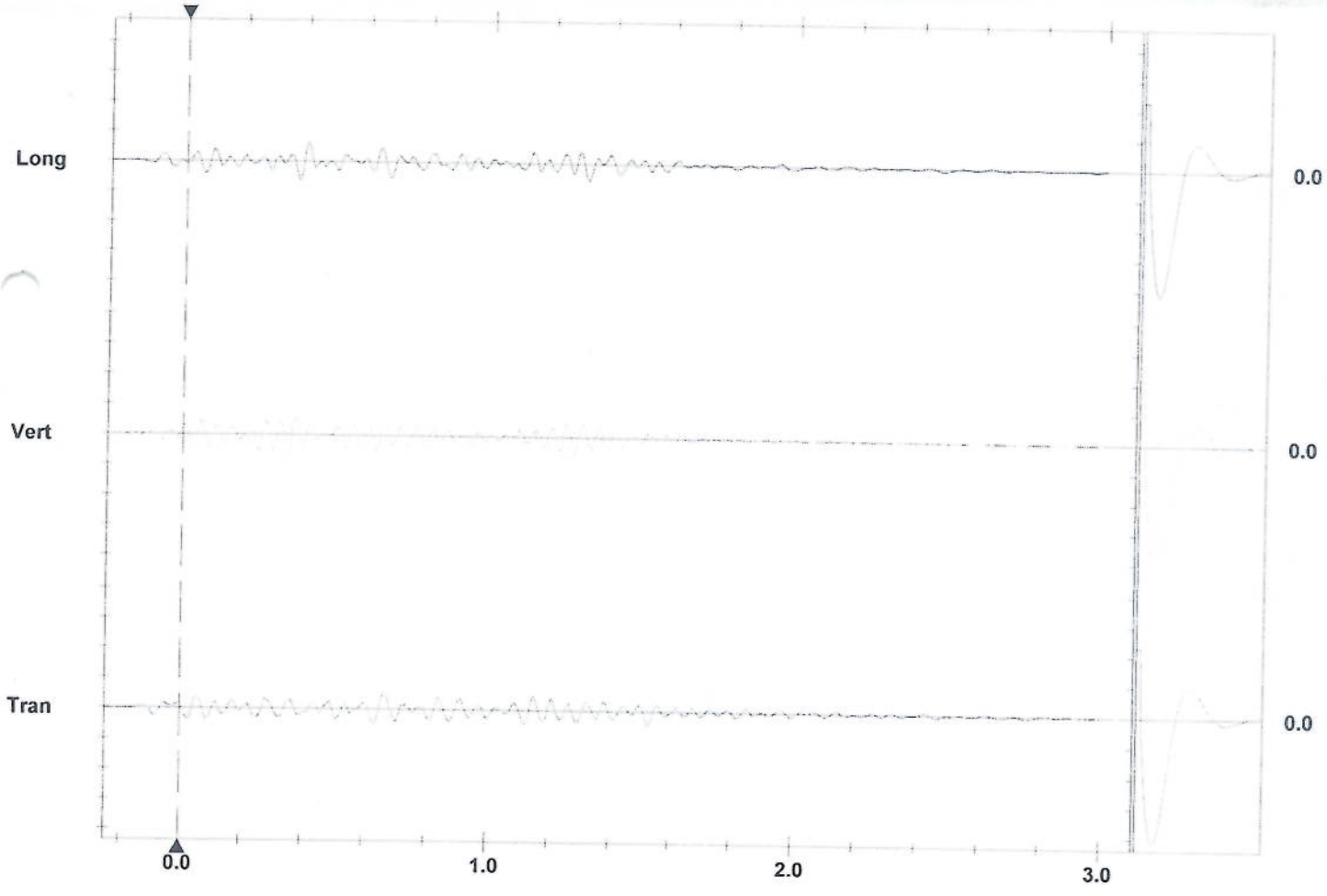
Serial Number	UM20055 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20241010135010.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

	Tran	Vert	Long	
PPV	1.111	1.174	1.324	mm/s
ZC Freq	13.8	21	17.7	Hz
Time (Rel. to Trig)	0.669	0.346	0.397	sec
Peak Acceleration	0.016	0.028	0.026	g
Peak Displacement	0.012	0.009	0.011	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.5	Hz
Overswing Ratio	4.0	4.6	4.4	

Peak Vector Sum 1.705 mm/s at 0.370 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

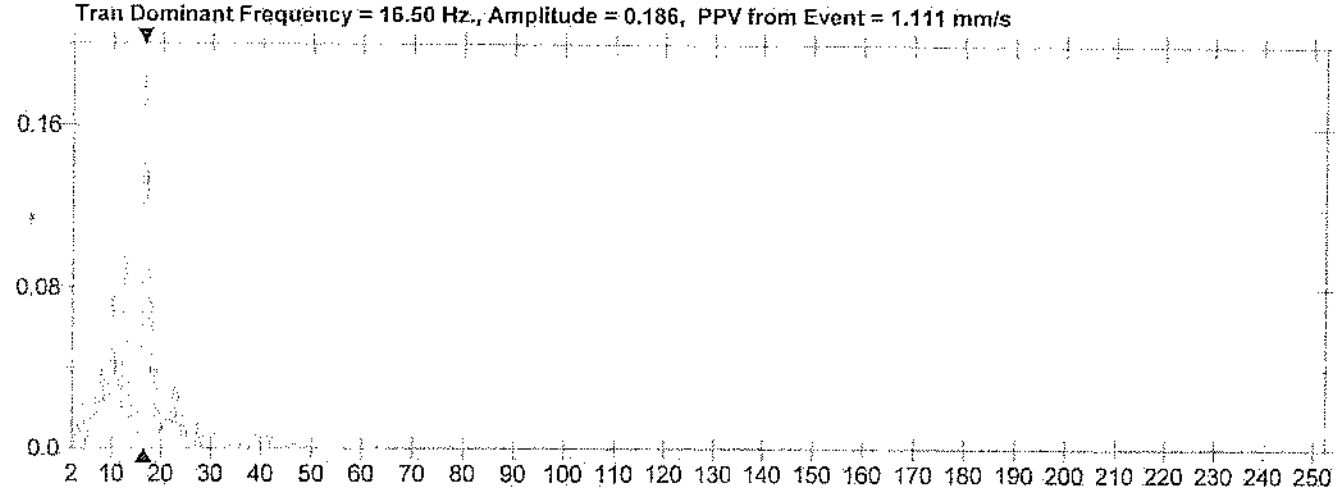
Instantel

FFT Report

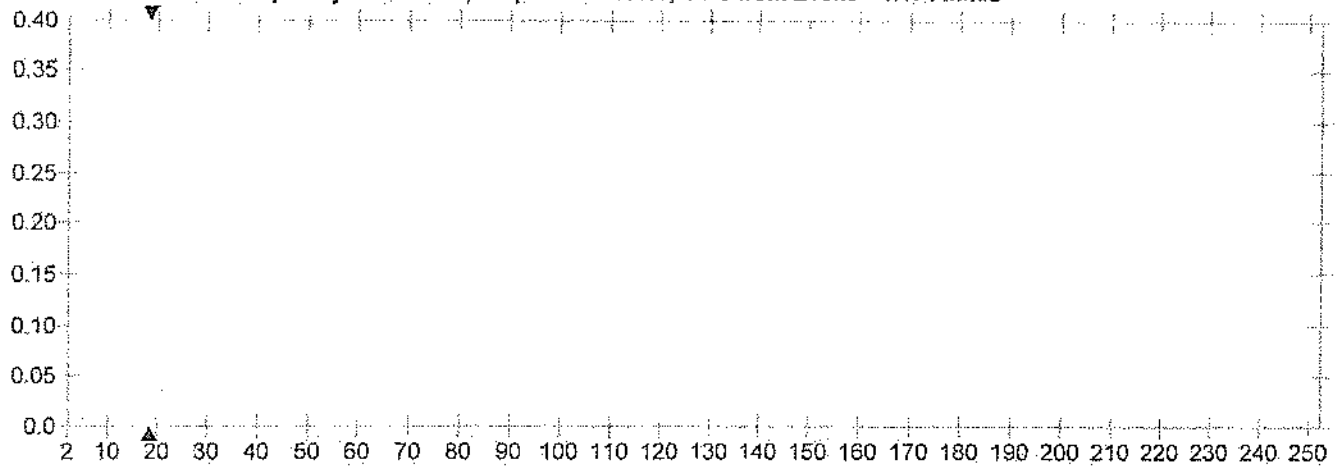
Date/Time	Vert at 13:50:10 October 10, 2024	**Serial Number**	UM20055 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s	**Battery Level**	3.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM20055_20241010135010.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

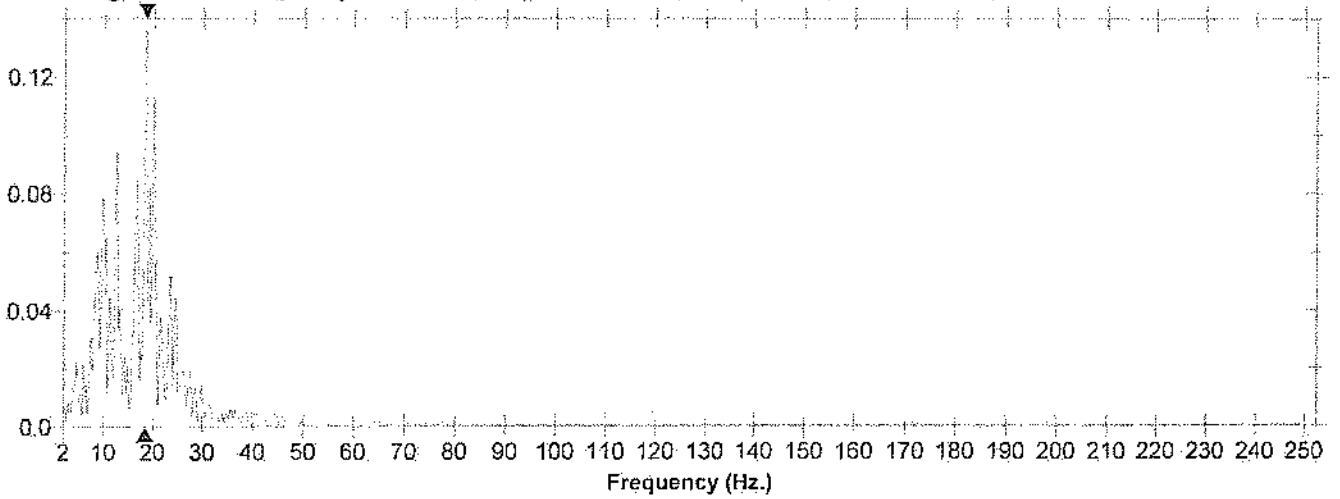
Tran Dominant Frequency = 16.50 Hz., Amplitude = 0.186, PPV from Event = 1.111 mm/s



Vert Dominant Frequency = 18.50 Hz., Amplitude = 0.215, PPV from Event = 1.174 mm/s



Long Dominant Frequency = 18.50 Hz., Amplitude = 0.137, PPV from Event = 1.324 mm/s



Instantel

Event Report

Date/Time	Long at 13:44:58 October 21, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241021134458.IDFW

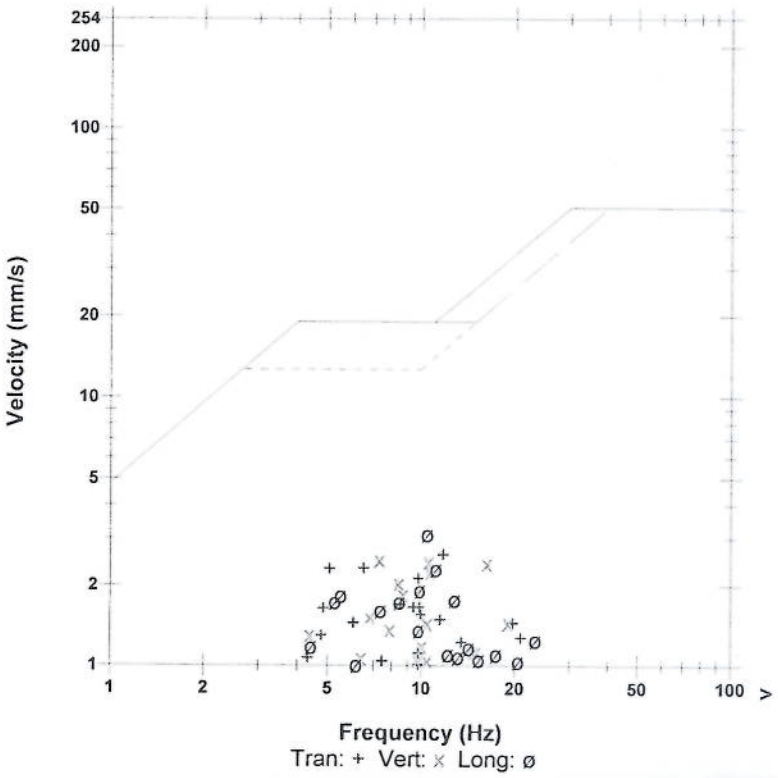
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

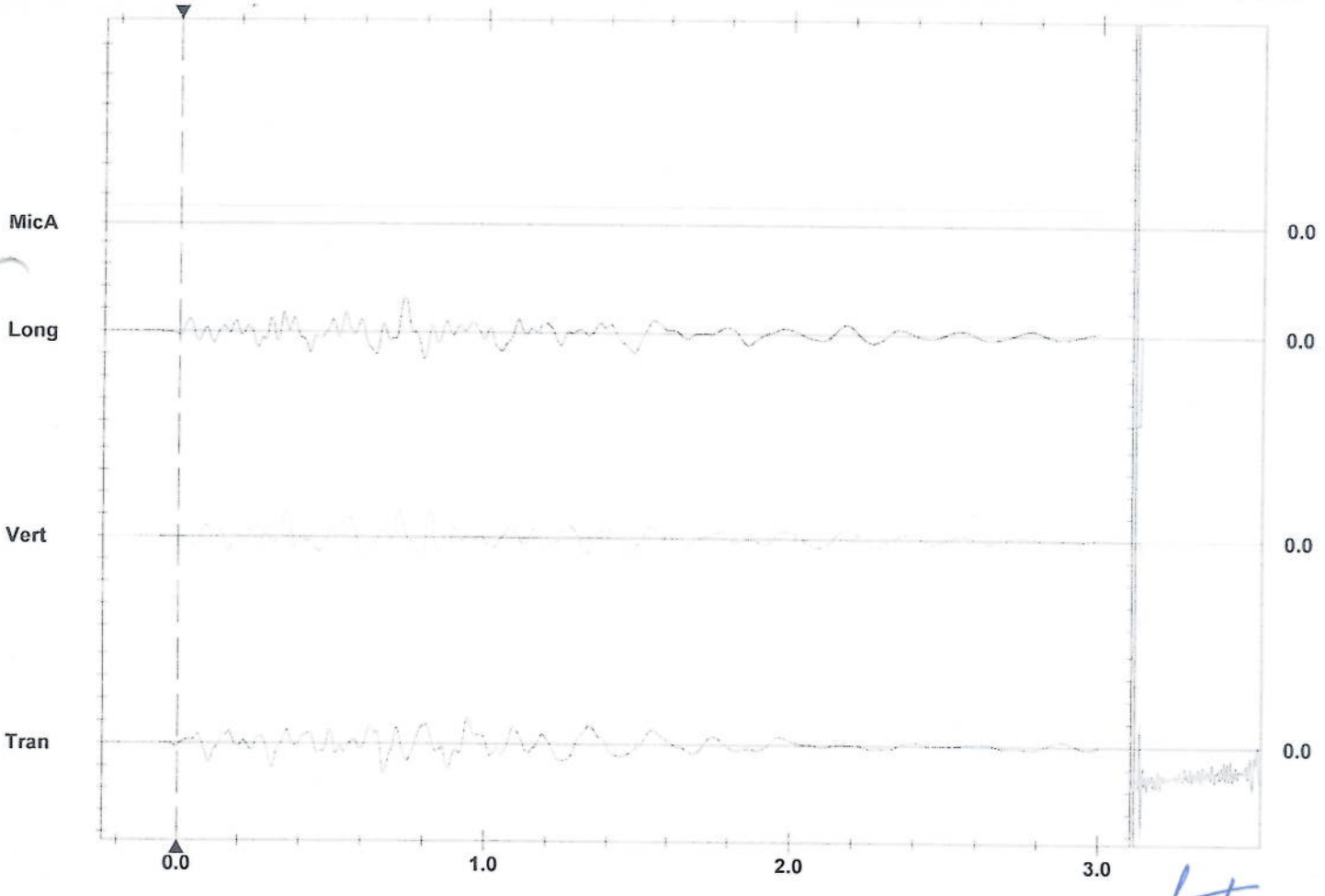
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	2.617	2.491	3.113	mm/s
ZC Freq	11.8	7.3	10.4	Hz
Time (Rel. to Trig)	0.673	0.600	0.733	sec
Peak Acceleration	0.033	0.043	0.038	g
Peak Displacement	0.048	0.050	0.046	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 3.442 mm/s at 0.731 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

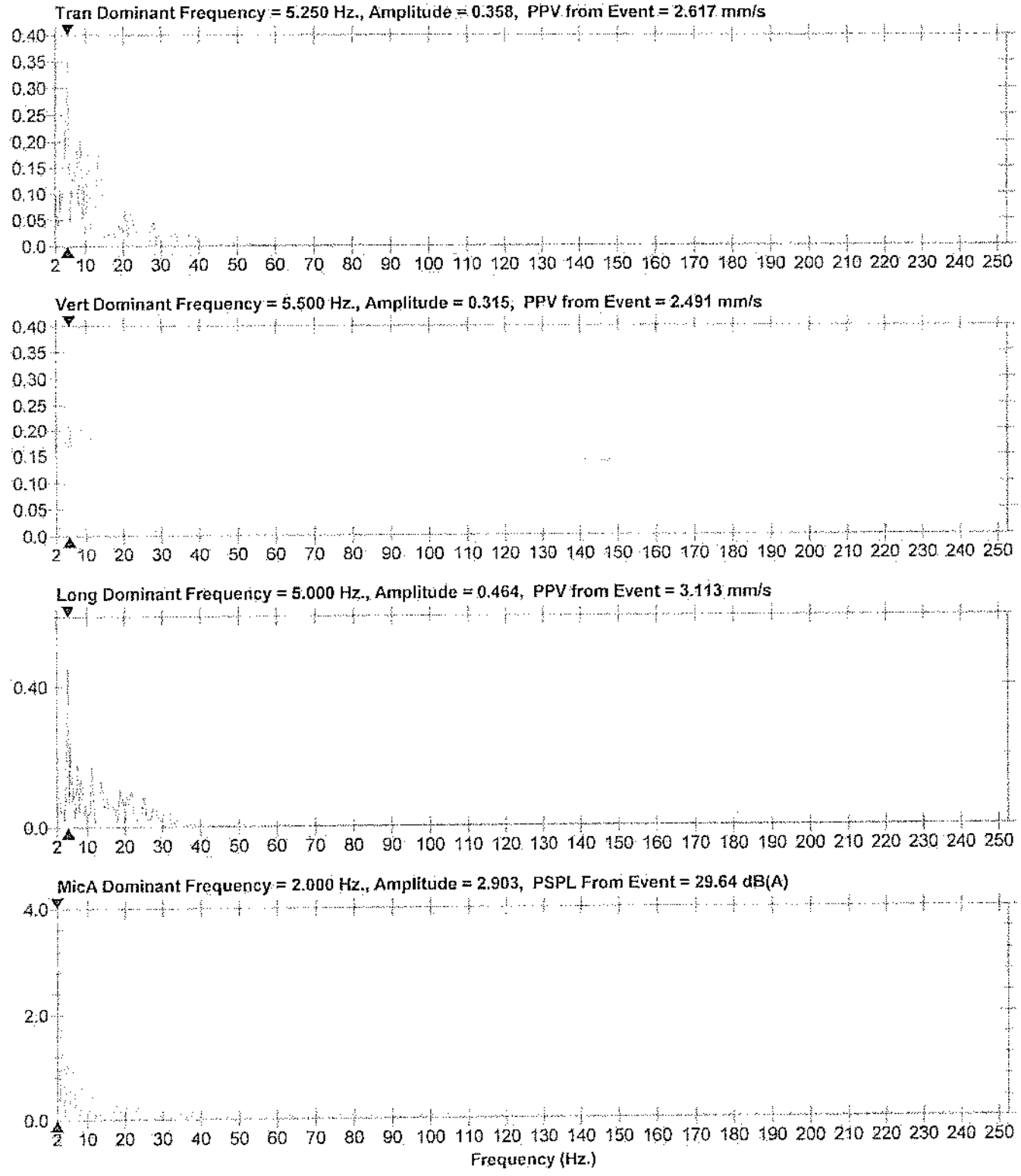
For IDL Explosives Limited

Instantel

FFT Report

Date/Time	Long at 13:44:58 October 21, 2024	Serial Number	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	Battery Level	3.8 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15576_20241021134458.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



ANNEXURE-XV

Summarised Noise Monitoring Report Katamati Iron Ore Mine of M/s Tata Steel Limited Period: April 2024 to September 2024					
Mine Location	Sampling Location	Month	Unit	Results	
				Day	Night
Katamati Iron Ore Mine	Hospital Premises	April 2024	dB(A)	46.3	37.9
		May 2024	dB(A)	47.3	38.1
		June 2024	dB(A)	49.1	38.6
		July 2024	dB(A)	47.3	39.1
		August 2024	dB(A)	46.1	37.3
		September 2024	dB(A)	47.2	38.6
	Training Centres	April 2024	dB(A)	48.1	41.6
		May 2024	dB(A)	51.7	42.8
		June 2024	dB(A)	51.9	43.7
		July 2024	dB(A)	54.1	43.9
		August 2024	dB(A)	51.3	41.7
		September 2024	dB(A)	51.9	43.1
	Township	April 2024	dB(A)	53.6	38.1
		May 2024	dB(A)	54.1	42.9
		June 2024	dB(A)	53.6	41.2
		July 2024	dB(A)	51.8	43.1
		August 2024	dB(A)	48.2	39.7
		September 2024	dB(A)	51.3	42.8
	Chief Office	April 2024	dB(A)	67.2	54.9
		May 2024	dB(A)	68.6	54.7
		June 2024	dB(A)	67.3	58.1
		July 2024	dB(A)	52.9	41.6
		August 2024	dB(A)	51.8	43.9
		September 2024	dB(A)	52.7	41.2
	Mining Area	April 2024	dB(A)	71.4	62.8
		May 2024	dB(A)	71.2	61.4
		June 2024	dB(A)	71.4	62.8
		July 2024	dB(A)	71.6	58.3
		August 2024	dB(A)	69.1	57.2
		September 2024	dB(A)	72.1	63.9
	Plant Area	April 2024	dB(A)	69.3	52.1
		May 2024	dB(A)	68.9	54.3
		June 2024	dB(A)	64.3	56.2
		July 2024	dB(A)	67.2	58.6
		August 2024	dB(A)	71.2	56.3
		September 2024	dB(A)	67.3	58.1

ANNEXURE-XVI A

GROUND WATER QUALITY REPORT (APRIL 2024 - SEPTEMBER 2024)
KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		MAY 2024					
I	**Biological Testing 1. Water**						
1	*Escherichia coli*	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1. Water**						
2	Alkalinity (as $CaCO_3$)	181.68	169.87	164.27	157.46	196.38	167.49
3	Anionic detergent (as MBAS)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)
4	Colour	1	1	1	1	1	1
5	Cyanide (as CN)	BDL (DL – 0.005)	BDL (DL – 0.005)	BDL (DL – 0.005)	BDL (DL – 0.005)	BDL (DL – 0.005)	BDL (DL – 0.005)
6	Chloride (as Cl)	26.52	24.63	23.67	23.17	26.81	23.81
7	Calcium (as Ca)	53.67	41.57	51.39	48.76	46.27	47.36
8	Free residual chlorine	BDL (DL - 0.1)	BDL (DL - 0.1)	BDL (DL - 0.1)	BDL (DL - 0.1)	BDL (DL - 0.1)	BDL (DL - 0.1)
9	Fluoride (as F)	0.21	0.21	0.26	0.18	0.19	0.27
10	Magnesium (as Mg)	11.64	13.97	11.57	11.43	13.52	13.91
11	Nitrate (as NO_3)	12.27	5.58	5.93	9.27	5.17	5.82
12	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
13	pH	6.97	6.87	6.91	7.81	7.92	7.93
14	Phenolic compounds (as C_6H_5OH)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)
15	Sulphate (as SO_4)	13.81	13.64	13.87	13.57	13.81	14.76
16	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	462	492	463	462	462	481
18	Turbidity	0.4	0.6	0.3	BDL (DL – 0.1)	0.3	0.6
19	Total hardness (as $CaCO_3$)	181.98	161.30	175.99	168.84	171.20	175.53
II	Chemical Testing 2. Residues In Water						
20	Arsenic (as As)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)
21	Aluminium (as Al)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
22	Barium (as Ba)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
23	Boron (as B)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
24	Copper (as Cu)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
25	Cadmium (as Cd)	BDL (DL - 0.002)	BDL (DL - 0.002)	BDL (DL - 0.002)	BDL (DL - 0.002)	BDL (DL - 0.002)	BDL (DL - 0.002)
26	Iron (as Fe)	0.21	0.32	0.24	0.36	0.21	0.24
27	Lead (as Pb)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)
28	Manganese (as Mn)	BDL (DL – 0.02)	BDL (DL – 0.02)	BDL (DL – 0.02)	BDL (DL – 0.02)	BDL (DL – 0.02)	BDL (DL – 0.02)

ANNEXURE-XVI A

GROUND WATER QUALITY REPORT (APRIL 2024 - SEPTEMBER 2024)

KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		MAY 2023					
29	Mercury (as Hg)	BDL (DL - 0.001)	BDL (DL - 0.001)	BDL (DL - 0.001)	BDL (DL - 0.001)	BDL (DL - 0.001)	BDL (DL - 0.001)
30	Selenium (as Se)	BDL (DL- 0.01)	BDL (DL- 0.01)	BDL (DL- 0.01)	BDL (DL- 0.01)	BDL (DL- 0.01)	BDL (DL- 0.01)
31	Total Chromium (as Cr)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
32	Zinc (as Zn)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)	BDL (DL - 0.02)
33	Polynuclear aromatic hydrocarbon (PAH)	BDL(DL-0.03)	BDL(DL- 0.03)	BDL(DL-0.03)	BDL(DL-0.03)	BDL(DL- 0.03)	BDL(DL- 0.03)
34	Mineral Oil	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)	BDL (DL – 0.001)
II	**Chemical Testing 2. Residue In Water**						
35	**Pesticide Residues Organochlorine**						
i	Alpha-HCH	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)	BDL (DL - 0.01)
ii	Beta HCH	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
iii	Gamma - HCH (Lindane)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
iv	Delta- HCH	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
v	Alachlor	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
vi	Aldrin	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
vii	Dieldrin	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
viii	Butachlor	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
ix	p,p´-DDE	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
x	o,p´-DDE	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xi	p,p´-DDD	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xii	o,p´-DDD	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xiii	o,p´- DDT	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xiv	p,p´- DDT	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xv	Monocrotophos	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xvi	Atrazine	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xvii	Parathion methyl	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xviii	Paraoxon methyl	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xix	Malathion	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xx	Malaoxon	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xxi	Ethion	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)
xxii	Chlorpyrifos	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)	BDL (DL - 0.03)

ANNEXURE-XVI A

GROUND WATER QUALITY REPORT (APRIL 2024 - SEPTEMBER 2024)
KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		AUGUST 2024					
I	**Discipline: Biological**						
1	*Escherichia coli*	Absent	Absent	Absent	Absent	Absent	Absent
II	**Discipline: Chemical**						
2	Alkalinity (as $CaCO_3$)	161.47	197.24	177.18	172.84	157.62	191.68
3	Anionic surface active agents (as MBAS)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)
4	Colour	4	3	3	3	3	3
5	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
6	Chloride (as Cl)	36.17	36.57	38.71	36.57	17.91	26.78
7	Calcium (as Ca)	53.68	42.81	49.26	43.12	32.46	52.47
8	Free residual chlorine	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)
9	Fluoride (as F)	0.28	0.27	0.37	0.21	0.13	0.31
10	Magnesium (as Mg)	13.54	11.94	11.68	11.52	9.52	13.57
11	Nitrate (as NO_3)	9.36	5.26	5.17	5.36	3.87	7.63
12	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
13	pH	6.71	7.92	8.13	7.17	7.16	6.72
14	Phenolic compounds (as C_6H_5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
15	Sulphate (as SO_4)	12.68	7.68	11.64	6.94	4.82	8.36
16	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	471	452	471	472	453	451
18	Turbidity	0.6	0.6	0.3	0.3	0.2	0.3
19	Total hardness (as $CaCO_3$)	189.81	156.06	171.12	155.11	120.25	186.90
II	**Discipline: Chemical**						
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Aluminium (as Al)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
22	Barium (as Ba)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Boron (as B)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
24	Copper (as Cu)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
25	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
26	Iron (as Fe)	0.28	0.24	0.16	0.26	0.17	0.24
27	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
28	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

ANNEXURE-XVI A

GROUND WATER QUALITY REPORT (APRIL 2024 - SEPTEMBER 2024)

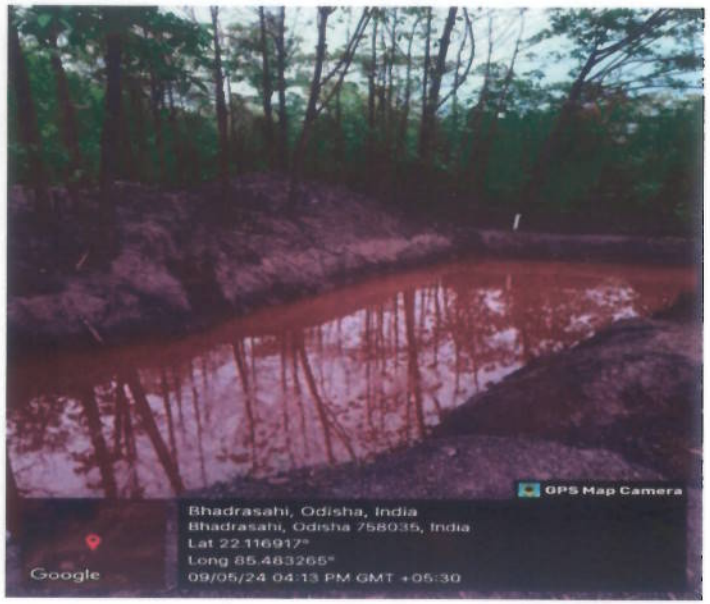
KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		AUGUST 2024					
29	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
30	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
31	Total Chromium (as Cr)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
32	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
33	Polynuclear aromatic hydrocarbon (PAH)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
III	**Discipline: Chemical**						
34	Mineral Oil	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
IV	**Discipline: Chemical**						
35	**Pesticide Residues Organochlorine**						
i	Alpha-HCH	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
ii	Beta HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iii	Gamma - HCH (Lindane)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iv	Delta- HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
v	Alachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vi	Aldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vii	Dieldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
viii	Butachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
ix	p,p´-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
x	o,p´-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xi	p,p´-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xii	o,p´-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiii	o,p´- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiv	p,p´- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xv	Monocrotophos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvi	Atrazine	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvii	Parathion methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xviii	Paraoxon methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xix	Malathion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xx	Malaoxon	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxi	Ethion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxii	Chlorpyrifos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)

ANNEXURE-XVI B

Summarised Ground Water Level Report				
Katamati Iron Ore Mine of M/s Tata Steel Limited				
Period: April 2024 to September 2024				
Month	Locations wise Ground Water Level in Mtrs. = mbmp- magl			
	Mahadev Nasha	Daladiri-1	Tata Sponge	Daladiri-2
Apr' 24	3.46	4.27	4.46	4.56
May' 24	3.5	4.5	4.6	4.7
Jun' 24	3.46	4.27	4.34	4.61
Jul' 24	3.17	3.86	4.03	4.01
Aug' 24	3.01	3.53	3.41	3.41
Sep' 24	2.82	3.32	3.33	3.16

ANNEXURE-XVII



Settling Pond

Garland Drain & retaining wall

Check Dam

TATA

The Member Secretary
State Pollution Control Board, Odisha
Parivesh Bhawan, A/118, Nilakantha Nagar
Unit-VIII, Bhubaneswar-751012

MD/ ENV/1111/122/2024
Date: 18th June 2024

Subject: Submission of Annual Return of Hazardous Waste in the prescribed format (Form-IV), as per Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 for a period April 2023 to March 2024 of Katamati Iron Mine, M/s Tata Steel Limited.

Ref.: Hazardous Waste Authorization of Katamati Iron Mine, M/s Tata Steel Limited, vide letter no. IND-IV-HW-1099/15712, dated: 11.11.2021 valid till 31.03.2025.

Dear Sir,

Kindly find attach the Annual Return of Hazardous Waste in the prescribed format (Form-IV), as per Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 for a period April 2023 to March 2024 of Katamati Iron Mine, M/s Tata Steel Limited.

The detailed summary sheet of Hazardous waste disposal manifest (Form-10) generated from site is attached for kind information along with a copy **(Annexure-1)**.

We trust the information furnished is in line with your requirement. Kindly acknowledge the same.

Thanking you,

Yours sincerely,
f: M/s Tata Steel Limited

Pinaki Kumar
Head (Planning), OMQ

Encl.: As above

C.c.: Regional officer. State Pollution Control Board, Odisha, Baniapata, College Road, Keonjhar – 758 001, Odisha

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

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILLING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1.	Name and address of facility	:	Katamati Iron Mine, Tata Steel Ltd., P.O: Deojhar, Dist.: Keonjhar, Odisha
2.	Authorisation No. and Date of issue:		IND-IV-HW-1099/15712 dated 11.10.2021 valid till 31.03.2025.
3.	Name of the authorized person & Full address with telephone	:	Mr. Raval Akshaykumar Nileshkumar Asst. Mgr. (IBMD), OMQ Division Tata Steel Limited, P.O: Noamundi, Dist.: Singhbhum (West), Jharkhand Phone: (O) : 9065515646
4.	Production during the year (product wise), Wherever applicable	:	Iron Ore (ROM) : 11.68 MTPA

Part A, To be filled by hazardous Waste generators

1.	Total quantity of waste generated category wise		
	5.1 Used oil	:	Nil
	5.2 Wastes or residues containing oil	:	Nil
	9.1 Lead bearing residues	:	Nil
	33.1 Ferrous Drums /containers/ Liners, Contaminated with Hazardous chemicals/wastes	:	Nil
2.	Quantity dispatched		
	i. To disposal facility	:	Nil
	ii. To re-cycler or co-processors Or processor	:	Nil
	iii. Others	:	Nil
3.	Quantity utilized in-house, if any	:	Nil
4.	Quantity in-storage at the end of the year	:	Nil

Part B. To be filled by Treatment, Storage and disposal facility operators

Not Applicable

1. Total quantity received –
2. Quantity in Stock at the beginning of the year –
3. Quantity treated –
4. Quantity disposed in landfills as such and after treatment –
5. Quantity incinerated {if applicables) –
6. Quantity processed other than specified above –
7. Quanity in storage at the end of the year –

Part C. To be filled by Treatment, Storage and disposal facility operators

Not Applicable

1. Quantity of waste received during the year -
   (i) Domestic sources
   (ii) Imported (if applicable)
2. Quantity in Stock at the beginning of the year –
3. Quantity recycled or co-processed or used –
4. Quantity of product dispatched (wherever applicable) -
5. Quantity of waste generated –
6. Quantity of waste disposed –
7. Quanity re-exported (wherever applicable) –
8. Quanity in storage at the end of the year

Date: 18th June 2024
Place: Katamati Iron Mine,
M/s Tata Steel Limited

Signature of the Occupier or
Operator of the disposal facility

ANNEXURE-XIX

Workers working with proper PPEs

ANNEXURE-XX

Compliance Report of MoEFCC's Office Memorandum No. Z-11013/57 /2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".		
SL No.	**Condition**	**Compliance**
A	the project authority shall adopt best mining practice for the given mining conditions. In the mining area, adequate number of check dams, retaining walls/structures, garland drains and settling ponds should be provided to arrest the wash-off with rain water in catchment area.	Complied. Mining is strictly being carriedout as per the Approved Mining Plan by IBM. We have constructed retaining walls, garland drains, settling ponds at appropriate locations inside mines area to arrest the run-off with rainwater in catchment area.
B	the natural water bodies and or streams which are flowing in and around the village should not be disturbed. The water table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the project authorities have to provide water to villagers for their use. a provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table.	Being complied. No natural water bodies or strams are flowing within the mining lease area. For augmentation of ground water table, we have constructed water harvesting ponds. Water level is monitored on regular basis by installation of automatic piezometers in core zone area & manual water level meter in buffer zone area.
C	the illumination and sound at night at project sites distribute the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. the project proponents (PPs) must ensure that the biological clock of the villagers is not disturbed by orienting the floodlights/masks away from the villages and keeping the noise levels well within the prescribed limits for day/night hours.	Being complied. No mining activities are carriedout within an area of 500 meters from village boundary. Blasting is being carrieout during day time only. And latest controlled blasting technologies by using NONEL to control noise & vibration are being carriedout. Lighting arrangements is done towards active mining areas away from village areas/ forest areas, there is no disturbance caused to nearby villages/ forest due to illumination and noise during night time.
D	the project authority shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing. In this context, project Authority should implement the directions of the hon'ble Supreme Court with regard to acquiring grazing land. the sparce trees on such grazing ground, which provide mid-day shelter from the scorching sun should be scrupulously guarded against felling lest the cattle abandon the grazing ground or return home by noon.	No grazing land present within the mining lease area.

E	where ever blasting is undertaken as part of mining activity, the project authority shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighbourhood. within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/dozer combination/ rock breakers/ surface miners etc. should be seriously considered and practiced wherever practicable. a provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units should be ascertained. the covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carriedout within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the competent authority.	Being Complied. No blasting is being carriocut within an area of 500 meters near habitats or other public buildings. Additionally, controlled blasting techniques with latest blasting technologies by using non-electric down detonctors with hole delay system and non-electronic trunk line delay system at surface which gives minimum vibration level as well as low value of air blast on the surface. ground vibration is being regularly monitored with the help of latest minimate/micromate Seismograph.
F	main haul road in the mine should be provided with permanent sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. Crusher and material transfer points should invariably be provided with bag filters and or dry fogging system. belt conveyors should be fully covered to avoid air borne dust.	Being complied. Fixed water spriklers installed at permanent haul road. Additionally, water sprinkling is carrioend on haul road, loadin unloading points with help of mobile water tankers. Primary Crusher is also fitted with dry-fog system. The iron ores are transported to the railway siding through conveyor belts.
G	the project authority shall ensure that the productivity of agricultural crops is not affected due to mining operations. Crop liability insurance policy has to be taken by the PP as a precaution to compensate for any crop loss. The impact zone shall be 5km from the boundary of mine lease-area for such insurance policy. in case, several mines are located in a cluster, the associations of owners of the cluster mines, formed inter-alia, to sub-srve such an objective, shall take responsibility for securing such crop liability policy.	Being Complied. A General Public Liability Insurance is made in which crop damage is also covered. The copy of Insurance copy is attached as AnnextureXXVII.
H	in case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the expert appraisal committee (EAC) should consider the proposal of environment clearance (EC) for reducing mining area. the mining lease may be executed for the area for which EC is accorded. the mining plan may also be accordingly revised and required stipulated stipulations under the MMDR Act, 1957 rind MCR,1960 met.	Not Applicable. As no village present within the mining lease area.
I	transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sounds dust and accidents could be mitigated. the PP shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the project. no road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	Being Complied. However, More than 50% Mineral transportation is done through conveyor belts to railway siding and further the products are transported to destination through rail.
J	likewise, alteration or re-routing of foot paths, pagdandies, card roads, the villages infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition is inevitable, alternative arangements shall be made first and then only the area acquired, in these types of cases, inspection reports by site visit by experts may be insisted upon which should be done through reputed institutes.	Being complied.

K	As CSR activities by companies including the mining Establishments has become mandatory upto 2% of their financial turnover, Socio Economic Development of the neighbourhood Habitats could also be planned and executed by the PPs more systematically based on the 'need based door to door survey' by established Social Institutes/ Workers on the lines as required under TOR. "R&R plan/compensation details for he project affected people (PAP) should be furnished. while preparing the R&R plan, the relevant state/National Rehabilitation 7 Resettlement Policy should be kept in view. In respect of SC's/ST's and other weaker sections of the society in the study area, a need based sample survey, family wise, should be undetaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line department of the state government. it may be clearly brought out whether the village located in the mine lease area will be shifted or not. the issue relating to shifting of village including their R&R and social-economic aspects should be discussed in the EIA report.	Being Complied.

Sarpanch
Deojhar Panchayat Office
Deojhar

Ref: MD/ENV/ 173 / 110 / 2021

Dated: 10.08.2021

Sub: Environment Clearance of M/s Tata Steel Limited for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha

Ref: Vide letter no. IA-J-11015/63/2018-IA-II (M) dated 05.08.2021.

Dear Sir,

This is to inform you that Environment Clearance has been granted for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha. A copy of EC is enclosed for reference.

Thanking you,

Yours sincerely,
f: Tata Steel Limited

Pinku Kumar
Head Planning (OMQ)

Encl: As above

Received
Mangal Munda
Sarpanch 10-11/08/21
Deojhar Grampanchayat
Block-Joda, Dist-Keonjhar

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
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

Sarpanch
Anseikala Panchayat Office
Anseikala

Ref: MD/ENV/ 174 / 110 / 2021

Dated: 10.08.2021

Sub: Environment Clearance of M/s Tata Steel Limited for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha

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Yours sincerely,
f: Tata Steel Limited

Pinku Kumar
Head Planning (OMQ)

Encl: As above

Received
Sarapanch 11/08/21
Anseikala G.P.

TATA STEEL LIMITED
Mines Division Noamundi 833 217 India
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Regional Office
Ministry of Environment, Forest & Climate Change
Regional Office (EZ), A/3
Chandrasekharpur
Bhubaneswar - 751023

MD/ENV/ 187-A / 98 /2021
Date: 16.08.2021

Sub: Advertisement regarding grant of Environmental Clearance for expansion of Katamati Iron Mine of M/s Tata Steel Limited.

Ref: Environmental Clearance letter no. IA-J-11015/63/2018.IA.II (M) dated: 05.08.2021.

Dear Sir,

In compliance to the standard condition no. 7 in EC granted with vide letter no. IA-J-11015/63/2018.IA.II (M) dated: 05.08.2021 which states that *"The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of clearance letter mentioning that the instant project has been accorded EC and copy of EC letter is available with the State Pollution Control Board/Committee and website of Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional office for compliance and record"* we hereby advertised in two newspapers i.e Orissa Post(English) and Prameya(Odiya) on 11.08.2021. A copy is enclosed as **Annexure**.

Thanking you,

Yours faithfully,
f: Tata Steel Limited

Chief (Mine Planning & Projects), OMQ

Encl: As above

TATA STEEL LIMITED
Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737
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ଭକ୍ତଙ୍କ ପାଇଁ ଖୋଲିଲା ମା'ଙ୍କ ଦୁଆର

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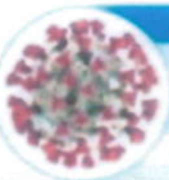
୨ ବାଇକ୍ ଧକ୍କା, ମହିଳା ମୃତ

କାଲି ଗୋଷ୍ଠେର ହାଇଓ୍ୱା ଜବତ

OrissaPOST
downtown

NEW ENTRANTS

Over a hundred Congress and BJP workers from [illegible] areas join Biju Janata Dal at the regional party's headquarters in Bhubaneswar, Tuesday



COVID-19 TRACKER

Project Tiger sees 50% cut in central funds

Over ₹40 crore has been sanctioned by Union govt for tiger and elephant projects in three years

WILDLIFE PROTECTION

Internal assessment system for Classes IX, X

Soumya Ranjan takes a dig at Naveen's style of functioning

₹374cr spl assistance for Odisha

POLITICKLE by MANJUL

Man held for firearms as wife tips off cops

Panchayat polls to be held on time: Law min

Mandaviya urged to implement Ayushman Bharat in Odisha

Per capita healthcare spending by Odisha govt at ₹1,581 as compared to national average of ₹1,944, said BJP MPs in the memo

ANNEXURE-XXIII

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: April 2024 to September 2024							
Location		**Murga Nallah Upstream**					
Parameters		**Apr 24**	**May 24**	**Jun 24**	**Jul 24**	**Aug 24**	**Sep 24**
I	**Biological Testing 1.Water**						
1	Total Colifom	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)
II	**Chemical Testing 1.Water**						
2	pH value	6.51	6.51	6.37	6.43	6.37	6.41
3	Colour	26	26	21	23	32	42
4	Dissolved Oxygen	6.5	6.5	6.7	6.4	6.2	6.4
5	Total Suspended Solid (as TSS)	28	28	26	32	32	36
6	BOD (3 days at 27°C)	2.73	2.73	2.64	2.51	2.71	2.51
7	Chemical oxygen demand	8.19	8.19	8.53	7.19	8.53	7.93
8	Total Dissolved Solids (TDS)	1354	1354	1264	1354	1287	1347
9	Copper (as Cu)	0.06	0.06	0.07	0.06	0.08	0.07
10	Chloride (as Cl)	131.76	131.76	128.46	116.52	304.73	316.53
11	Sulphate (as SO_4)	252.19	252.19	264.91	252	182.36	176.28
12	Nitrate (as NO_3)	38.16	38.16	32.46	28.16	27.41	28.46
13	Fluoride (as F)	0.62	0.62	0.64	0.53	0.52	0.47
14	Cyanide (as CN)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C_6H_5OH)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.46	0.46	0.42	0.43	0.38	0.32
18	Cadmium (as Cd)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr^{+6})	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: April 2024 to September 2024							
Location		**Murga Nallah Downstream**					
Parameters		**Apr 24**	**May 24**	**Jun 24**	**Jul 24**	**Aug 24**	**Sep 24**
I	**Biological Testing 1.Water**						
1	Total Colifom	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)
II	**Chemical Testing 1.Water**						
2	pH value	6.84	6.84	6.58	6.64	6.47	6.61
3	Colour	18	18	16	18	36	38
4	Dissolved Oxygen	6.1	6.1	6.3	6.1	6.4	6.3
5	Total Suspended Solid (as TSS)	16	16	18	24	26	28
6	BOD (3 days at 27°C)	2.64	2.64	2.53	2.47	2.84	2.47
7	Chemical oxygen demand	7.53	7.53	7.91	6.82	7.91	6.82
8	Total Dissolved Solids (TDS)	1192	1192	1132	1193	1193	1281
9	Copper (as Cu)	0.03	0.03	0.04	0.03	0.04	0.03
10	Chloride (as Cl)	121.58	121.58	116.53	103.94	294.76	281.79
11	Sulphate (as SO_4)	241.67	241.67	251.68	247	164.29	147.31
12	Nitrate (as NO_3)	27.94	27.94	28.52	21.94	24.93	19.32
13	Fluoride (as F)	0.51	0.51	0.53	0.47	0.46	0.38
14	Cyanide (as CN)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C_6H_5OH)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.42	0.42	0.38	0.37	0.31	0.26
18	Cadmium (as Cd)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr^{+6})	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: April 2024 to September 2024							
Location		**Jojo Nallah Upstream**					
Parameters		**Apr 24**	**May 24**	**Jun 24**	**Jul 24**	**Aug 24**	**Sep 24**
I	**Biological Testing 1.Water**						
1	Total Colifom	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)
II	**Chemical Testing 1.Water**						
2	pH value	6.51	6.51	6.56	6.52	6.57	6.61
3	Colour	48	26	42	42	43	21
4	Dissolved Oxygen	6.7	6.5	6.5	6.7	6.4	6.7
5	Total Suspended Solid (as TSS)	52	28	48	53	43	38
6	BOD (3 days at 27°C)	2.76	2.73	2.84	2.91	2.61	2.71
7	Chemical oxygen demand	8.19	8.19	7.31	8.56	8.94	8.64
8	Total Dissolved Solids (TDS)	1387	1354	1297	1385	1387	1281
9	Copper (as Cu)	0.06	0.06	0.07	0.08	0.06	0.07
10	Chloride (as Cl)	151.68	131.76	148.36	137.36	326.47	306.92
11	Sulphate (as SO_4)	217.32	252.19	204.71	212.58	216.53	241.76
12	Nitrate (as NO_3)	26.81	38.16	21.76	23.58	26.43	28.46
13	Fluoride (as F)	0.64	0.62	0.53	0.47	0.38	0.37
14	Cyanide (as CN)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C_6H_5OH)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.43	0.46	0.46	0.42	0.42	0.46
18	Cadmium (as Cd)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr^{+6})	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: April 2024 to September 2024							
Location		**Jojo Nallah Downstream**					
Parameters		**Apr 24**	**May 24**	**Jun 24**	**Jul 24**	**Aug 24**	**Sep 24**
I	**Biological Testing 1.Water**						
1	Total Colifom	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)	BDL(DL-2)
II	**Chemical Testing 1.Water**						
2	pH value	6.63	6.63	6.68	6.61	6.71	6.98
3	Colour	36	36	38	36	38	16
4	Dissolved Oxygen	6.3	6.3	6.1	6.4	6.7	6.4
5	Total Suspended Solid (as TSS)	48	48	36	42	38	26
6	BOD (3 days at 27°C)	2.53	2.53	2.62	2.76	2.52	2.43
7	Chemical oxygen demand	7.62	7.62	6.58	8.17	6.41	5.92
8	Total Dissolved Solids (TDS)	1294	1294	1136	1284	1291	1164
9	Copper (as Cu)	0.04	0.04	0.06	0.06	0.03	0.03
10	Chloride (as Cl)	147.39	147.39	138.29	116.52	273.81	264.71
11	Sulphate (as SO_4)	194.76	194.76	183.68	194.76	194.76	239.14
12	Nitrate (as NO_3)	24.58	24.58	17.32	18.54	18.52	16.52
13	Fluoride (as F)	0.58	0.58	0.47	0.38	0.27	0.31
14	Cyanide (as CN)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BDL(DL-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C_6H_5OH)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.37	0.37	0.43	0.36	0.38	0.42
18	Cadmium (as Cd)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BDL(DL-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr^{+6})	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BDL(DL-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BDL(DL-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BDL(DL-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

ANNEXURE- XXIV

Surface Water Flow Rate Measurement Report				
Katamati Iron Ore Mine of M/s tata Steel Limited				
Period: October 2024 to September 2024				
Mine Location	**Sample Location**	**Month**	**Unit**	**Results**
Noamundi iron Mine	Jojo Nalla	April 2024	Cu.m/hr	254.75
		May 2024	Cu.m/hr	264.61
		June 2024	Cu.m/hr	237.28
		July 2024	Cu.m/hr	229.82
		August 2024	Cu.m/hr	316.11
		September 2024	Cu.m/hr	745.24

ANNEXURE- XXV

Digital Display Board Installed at Mines

Deputy Director General of Forests (C),
Ministry of Env., Forest and Climate Change,
Integrated Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar – 751023
Email: roez.bsr-mef@nic.in

MD/ENV/ 1089 /104 / 2024
Date: 31.05.2024

Ref: Environmental Clearance letter no. IA-J-11015/63/2018. IA. II(M) dated: 05.08.2021.

Sub: Half-yearly compliance status report of Environmental Clearance conditions for the period October 2023 – March 2024 in respect of Katamati Iron Mine, M/s Tata Steel Limited.

Dear Sir,

Kindly find attached herewith the half-yearly compliance status report in respect of the stipulated Environmental Clearance conditions of Katamati Iron Mine, M/s Tata Steel Limited for the period from **October 2023 – March 2024.**

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: M/s Tata Steel Limited

Chief (Mine planning & Projects), 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, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012 (Odisha)
: The Regional Officer, SPCB, College Road, Baniapata, Keonjhar – 758001 (Odisha)

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

Date: 31.07.2024

OMQ/EMP/02/ /2024

DECLARATION

Formation of Environment Management Cell

Location: Ore Mines & Quarry Division which includes following locations→

1. Noamundi Iron Mine, over 1160.06 Ha located at Mahul, Balijore, Korta, Noamundi, Sarbil &Balijori villages, West Singhbhum District, Jharkhand.
2. Katamati Iron Mine, over 403.3238 Ha. At village Deojhar & Thakurani RF, Keonjhar District, Odisha.
3. Joda East Iron Mines, over 671.093 Ha. Located in village Joda, Kamarjoda, Banspani, Khuntpani &Baitarani RF in Barbil Taluka, Keonjhar District, Odisha.
4. Khondbond Iron & Mn. Mines, over 978 Ha. Located in village Khondbandh, Tehsil Barbil, Keonjhar District, Odisha.
5. Vijaya-II Iron Ore Mines, over 155.078 Ha. Located in village Ghatkuri, Tehsil: Noamundi, West Singhbhum District, Jharkhand.
6. Kalamang West (Northern Part) Block Iron Ore Mines, over 92.875 Ha. Located at village Gandalpada, Keonjhar District in villages Kalamang & Ghodabudani, Sundargarh Districts, Odisha.
7. Neelachal Iron Ore Mines, over 874.290 Ha. Located at Keonjhar & Sundargarh Districts, Odisha.
8. Gandhalpada Iron Ore Mine, over 241.10 Ha. At atGandhalpada, Guali and Barpada Villages, Barbil Tehsil, Keonjhar District, Odisha.

A separate Environment Management Cell has been formed, with suitable qualified personnel, under the control of Chief Mine Planning & Projects, who reports directly to the General Manager of Ore Mines & Quarry Division. The environment Management Cell will ensure compliance of following Acts & Rules but not limited to:

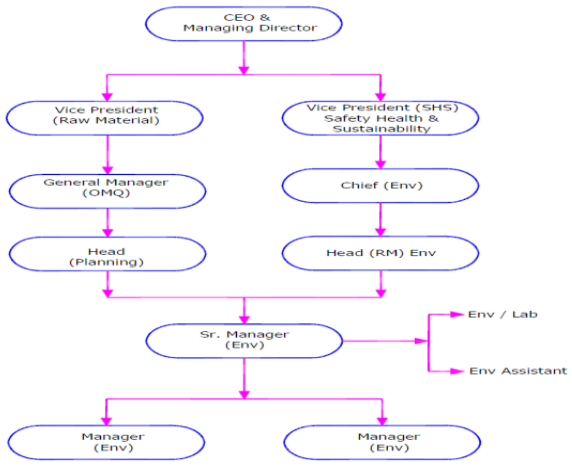
1. The Environment (Protection) Act, 1986.
2. Environmental Impact Assessment Notification, 14th Sep-2006.
3. Wildlife Protection Act 1972
4. Air (Prevention and Control of Pollution) Act, 1981
5. Water (Prevention and Control of Pollution) Act1974
6. Noise Pollution (Regulation and Control Act) 1990
7. Public Liability and Insurance Act 1991
8. The Forest (Conservation) Act. 1980
9. Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016**.**
10. E-waste Management Rules, 2022
11. Bio-medical Waste Management Rules, 2016
12. Battery Waste Management Rules, 2022

13. Plastic Waste Management Rules, 2022

The Environment Management Cell Consists of Following Personnels:

1. Shri. Awnish Kumar (Chief-Mine Planning & Projects)
2. Shri. Mukesh Kumar Prasad (Head-Environment Management)
3. Shri. Pinku Kumar (Head- Mine Planning)
4. Shri. Vivek Kumar Agarwal (Senior Area Manager- Planning)
5. Shri. Abinash Das (Area Manager- Environment)
6. Shri. Gaurav Dubey (Area Manager- Environment)
7. Shri. Roshan Singh (Area Manager- Horticulture)
8. Shri. Gaurav Mukherjee (Area Manager- Planning)
9. Shri. Vishal Kumar Singh (Area Manager- Planning)
10. Shri. Debasish Das (Senior Manager- Environment)
11. Shri. Sudhanshu Ranjan (Manager- Environment)
12. Shri. Shubham Singh (Manager-Environment)
13. Shri. Rishi Raj Kashyap (Manager-Environment)
14. Shri. Jarsaniya Harshkumar Dayabhai (Assistant Manager- Environment)
15. Shri. Ramendra Kumar (Officer- Environment)
16. Shri. Jhasketan Pradhan (Senior Environment Assistant)
17. Shri. Soumyak Palei (Environment Assistant)
18. Shri. Pragyan Prakash Mohanto (Environment Assistant)
19. Shri. Ganesh Karua (Environment Assistant)
20. Shri. Bharat Pan (Environment Assistant)
21. Shri. Gurucharan Laguri (Environment Assistant)
22. Shri. Gayatri Behera (Environment Chemist)

The detailed Organogram is as follows:



f: Tata Steel Limited

Awnish Kumar

Chief- Mine Planning & Projects (OMQ)