



स्टील ऑथोरिटी ऑफ इंडिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
बोकारो स्टील प्लांट
BOKARO STEEL PLANT
गुआ अयस्क खान
GUA ORE MINES

Ref. No. : GUA/E&L/Topailore-EC Compl._H1/2024-25/143

Date: 29.11.2024

To,

The Addl. PCCF (C)

Ministry of Environment, Forest and Climate Change

Regional Office (ECZ)

Bungalow No. A - 2, Shyamali Colony

Doranda, Ranchi - 834 002

Sub: Compliance Report of Environmental Clearance accorded by MoEF&CC to the Topailore Iron Ore Mining Project of Gua Ore Mines of SAIL, located in Ghatkuri Reserve Forest, Tehsil Gua, West Singhbhum Dist., Jharkhand

Ref.: 1. Ministry's Environment Clearance Letter No. EC/SEIAA/2015-16/694/2015/1291, dated 17.08.2015

2. EC amendment vide Letter No. J-11015/272/2011-IA. II(M) dated 19.05.2020

Sir,

As per the provisions of the condition no. (17) of above stated Environmental Clearance order granted to the Topailore Iron Ore Mining Project of Gua Ore Mines, the six monthly compliance report on the conditions stipulated in the Environmental Clearance for the period from **April, 2024 to September, 2024** is enclosed herewith for kind perusal please.

Thanking you.

For & on behalf of
SAIL-BSL, Gua Ore Mines


General Manager (Mines) and E&L
General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines

Encl: As stated above

Copy to:

1. Director, IA, MoEF&CC, GOI, Indira Paryavaran Bhavan, Aliganj, Jor Bagh Road, New Delhi - 110 003.
2. Member Secretary, JSPCB, HEC, Dhurwa, Ranchi - 834 004.
3. In-charge, Eastern Zone, CPCB, Southern Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700 107 (W. B.)
4. The Regional Office, JSPCB, Jamshedpur

Compliances for conditions of Environmental Clearance (Vide Order no.EC/ SEIAA/2015-16 /694/2015/1291, dated 17.08.2015, EC Amendment Order No. J-11015/272/2011-IA.II (M) dated 19.05.2020 and EC/SEIAA/2022-23/2664/2022/299 dated 13.12.2022) of Topailore Iron Ore Mining Project of Gua Ore Mines of M/s. STEEL AUTHORITY OF INDIA LTD (Period: April, 2024 – September, 2024)

SL.	CONDITION	COMPLIANCES
A. <u>Specific Conditions:</u>		
1.	This Environment Clearance is valid subject to the following condition below – That this project has- a. Obtained all legal rights to operate at concerned place. b. Complied with all existing concerned laws of the land and c. Complied with the decisions of SEIAA on the issue of Environment Clearance till date.	Agreed to. Topailore Iron Ore Mining Project has valid mining lease, approved Forest Clearance from MoEF&CC and approved CTE & CTO from JSPCB.
2.	The Environment Clearance is subject to renewal of mining lease as per Rule 24 A of mineral concession Rule 1960 and all other Statutory Conditions as imposed by various agencies / District Authorities are complied with.	Agreed to. The lease has been extended & executed upto 08.03.2040 as per MCR, 2021/MMGC Rule, 2015.
3.	At the time of obtaining Consent to establish/ Consent to Operate, PP should submit sitemap duly signed by PP and DMO to JSPCB & SEIAA.	Amendment in Environmental Clearance (EC) for both captive use and sale of fines has been granted by SEIAA, Jharkhand, vide letter ref. no. EC/SEIAA/2022-23/2664/2022/299 dated 13.12.2022. Accordingly, Consent to Establish (CTE) and Consent to Operate (CTO) as per amended EC has been granted by JSPCB under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 vide Ref No.: JSPCB/HO/RNC/CTE-14995189/2023/4 dated 05.01.2023 and vide reference no. JSPCB/HO/RNC/CTO-17134844/2024/73 dated 17.01.2024 respectively. CTO is valid till 31.12.2025. Sitemap was submitted to JSPCB along with application for Consent to establish (CTE).



SL.	CONDITION	COMPLIANCES
4.	At the time of obtaining consent to operate, PP will erect boundary pillars to demarcate boundary of lease. GPS reading, backward – forward bearing & pillar to pillar distance is to written on each pillar. Pillar wise list will be submitted to SEIAA and JSPCB before issue of Consent to Establish/Consent to Operate.	The demarcation of boundary of diverted forest land which itself is the total mining lease area (14.15 ha) and safety zone (7.5-meter strip within the boundary of the mining lease area), and its protection by erecting adequate number of 4 feet high RCC boundary pillars inscribed with DGPS coordinates was completed. Copy of the survey map including DGPS co-ordinates has been submitted to concerned statutory bodies before issue of Consent to Establish/Consent to Operate.
5.	All the conditions stipulated by the State Pollution Control Board in their NOC shall be effectively implemented.	Agreed. All the conditions stipulated by the State Pollution Control Board in the NOC will be effectively implemented once the mining operation starts.
6.	Environment Clearance is subject to obtaining clearance under Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna.	The condition is not applicable as there is no designated wildlife protected area/wildlife sanctuary within 10 Km radius to the project site.
7.	Necessary permission from the Forest Department for transportation of minerals through the forest road shall be revalidated before restarting the mining operations.	Topailore Lease is presently non-operational. This condition is noted and shall be complied before restarting the mining operations.
8.	The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ground Water Directorate, Government of Jharkhand / Central Ground Water Board shall be obtained. Benches height and slope shall be maintained as per approved mining plan.	Topailore Mine Lease does not have any geological reserves of iron ore. The iron ore deposited in Topailore lease are those which have been washed down from the fines dump of Duarguiburu Lease and dumped on flat ground. The mine will be worked by means of opencast mechanized method of mining using pay-loader, dozer and dumper. No drilling and blasting will be required. The Ground Water Table in the Lease area occurs at 400 m AMSL



SL.	CONDITION	COMPLIANCES
		whereas ultimate pit limit will be the original ground level i.e. 470 m AMSL whereas the current depth of the pit is 515 m AMSL. So there will be no intersecting of ground water table during mining operations at the mine.
9.	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of first order and second order streams, if any emanating / passing through the mine lease area during the course of mining operation.	There is no natural watercourse in the mining lease area, however, adequate measures will be taken for conservation and protection of first order and second order streams present in nearby area of mine lease during the course of mining operation
10.	The top soil shall temporarily be stored at earmarked site(s) only with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Topailore Mine Lease does not have any geological deposit of iron ore. The iron ore deposited in Topailore lease are those which have been washed down from the processed fines dump of Duarguiburu Lease (adjacent main mining lease of Gua Ore Mines) and dumped on flat ground. The mine will be worked by means of opencast mechanized method of mining using pay-loader, dozer and dumper. No drilling and blasting will be required. Therefore, there will be no instance of encountering top soil.
11.	The entire waste generated shall be backfilled and there shall be no external overburden dump left at the end of mine life. The entire backfilled area shall be reclaimed by plantation. The back filling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation become self- sustaining. Compliance status should be submitted to Jharkhand state Pollution Control Board, Ranchi and its nearest Regional Office on six monthly basis.	<p>Noted for compliance.</p> <p>The iron ore deposited in Topailore lease are those which have been washed down from the processed fines dump of Duarguiburu Lease (adjacent main mining lease of Gua Ore Mines) and dumped on flat ground. Therefore no waste will be generated in Topailore lease.</p> <p>Since Topailore ML is located entirely within forest land, after the deposited iron ore fines are excavated to the maximum possible extent, progressive reclamation and rehabilitation will be carried out as per IBM approved Progressive Mine Closure Plan.</p>



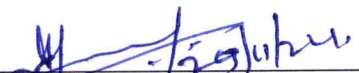
SL.	CONDITION	COMPLIANCES
12.	Catch drains and siltation ponds of appropriate size should be constructed for the working pit, temporary OB dumps, If any and mineral dump to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The Drains should be regularly desilted, particularly after monsoon, and maintained properly.	As practiced in the adjacent lease (i.e. Duarguiburu which is main mining lease under Gua Ore Mine) of the said project, all mining pits, the storm water in the rainy season is being drained & collected in mining pits, which has almost totally eliminated the discharge of storm water from mining pit. A detailed study has been conducted by IIT Kharagpur for identifying places vulnerable to erosion, surface runoff control and suggesting mitigative measures. Based on the recommendations of IIT KGP, as practice is being followed in adjacent lease, the protective measures viz. garland drains, settling tanks and check dams of appropriate size will be constructed during the period of operation in addition to existing control measures as per requirement. Actions are being taken for utilizing stored water for watering the mine area, roads, greenbelt development etc. Existing drains and sedimentation pits are regularly desilted, after monsoon, and maintained properly.
13.	Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and temporary dumps and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.	Garland drain of appropriate size, gradient and length are constructed for mine pit and temporary sump capacity will also be designed keeping 50% safety margin over and above peak sudden rainfall and maximum discharge in the area adjoining the mine site. As done in past within the adjacent lease of Gua, sedimentation pits will be constructed at the corners of the garland drains and the same will be desilted at regular intervals. These measures will be taken as when required depending upon the topography and field condition of the site.
14.	Dimension of the retaining wall at the toe of the temporary dumps and OB benches within the mine to check run-off and siltation should be based on the rain fall data	No overburden dump will be created in the mining period because this project is only for excavation of existing dump fines within the lease hold area.

[Signature]
General Manager (Mines) & E&L
Gua Ore Mines



SL.	CONDITION	COMPLIANCES
14 (1).	Plantation shall be raised in the 7.5 m wide green belt in the safety zone around the mining lease by planting native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with local DFO/ Agriculture Department. Greenbelt shall be developed all along the mine lease area and haul roads. The project proponent shall do tree plantation in at least 33% of the space preferably along the periphery and in vacant species. Fast growing and local species will be planted. In case land is not available within the lease area or it is not possible to plant tree due to nature of land then PP will do necessary afforestation at other place/land.	<p>Agreed.</p> <p>It is pertinent to mention that entire lease area of 14.15 Ha is broken prior to 1980. Therefore, the leasehold area does not have any trees. Topailore Mine Lease does not have any geological reserves of iron ore. However, the iron ore present in the entire Topailore Lease are those which have been washed down from the fines dump of adjacent Durgaburu Lease and deposited on flat ground in the past. Since the complete area is filled with washed Iron Ore, plantation activity is carried out at the adjacent Duargaburu Mining Lease and Surface Lease area.</p> <p>The green belt has been developed all around the adjacent mine lease and surface lease area. This has not only improved green cover but also resulted in reducing dust levels and attenuating noise & erosion.</p> <p>However, efforts are being made to cover all the remaining patches with native sapling.</p>
15.	Regular water sprinkling shall be carried out in critical areas prone to air pollution & having high levels of SPM and RSPM such as haul road, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control board in this regard.	In adjacent Duargaburu Lease, High pressure Water Sprinklers (28 KL) have been deployed for regular water sprinkling on Haul Roads and other dust prone areas. In addition to this, permanent sprinklers installed near OHP area and at railway siding. All these dust control measures installed at Duargaburu mines and other areas have significantly controlled fugitive dust generation and helped in maintaining the air quality in and around the mines. The same arrangement will be made for Topailore mining lease of Gua Ore Mines whenever it will be operational.
16.	The project authority should implement suitable conservation measures to augment the ground water resource in the area in consultation with	Suitable conservation measures to augment the ground water resource in the area in consultation with Ground Water



SL.	CONDITION	COMPLIANCES
	Ground Water Directorate, Government of Jharkhand / Central Ground Water Board / Authority.	Directorate, Government of Jharkhand are under implementation. Water conservation through construction of sedimentation cum rain water harvesting pits and Gully plugging etc. has already been implemented. Additionally, rooftop rainwater harvesting system is also implemented in Gua township. The construction of rooftop rainwater harvesting system for ground water recharge through recharge pit cum shaft at Director Bungalow and Guest House buildings of Gua Township has been completed.
17.	The Project authority should obtain prior approval of the competent authority for drawl of water required for the project.	Permission for drawl of required water has already been taken from Water Resource Department, Govt. of Jharkhand. Agreement for water withdrawal has been renewed for the period from July' 2023 to June' 2028.
18.	Suitable rainwater harvesting measures shall be planned and implemented in consultation with Ground Water Directorate, Government of Jharkhand/ Central Ground Water Board / Authority.	Suitable conservation measures to augment the ground water resource in the area in consultation with Ground Water Directorate, Government of Jharkhand are under implementation. Water conservation through construction of sedimentation cum rain water harvesting pits and Gully plugging etc. has already been implemented. Additionally, rooftop rainwater harvesting system is also implemented in Gua township. The construction of rooftop rainwater harvesting system for ground water recharge through recharge pit cum shaft at Director Bungalow and Guest House buildings of Gua Township is completed. The photographs of rooftop rainwater harvesting are enclosed as Annexure-1 .
19.	Vehicular emission shall be kept under control & regularly monitored. Measures shall be taken for maintenance of vehicle used in mining operation & in transportation of Minerals. The vehicle shall be covered with a tarpaulin & shall not be overloaded.	Topailore Lease is presently non-operational. This condition shall be complied when the lease is operational.  General Manager (Mines), SAIL-BSL, Gua Ore Mines



SL.	CONDITION	COMPLIANCES
20.	Blasting operation should be carried out during the daytime. Control Blasting should be practiced. The mitigative measures for control of ground vibration & to arrest fly rocks and boulders should be implemented	The mine will be worked by means of opencast mechanized method of mining using pay-loader, dozer and dumper. No drilling and blasting will be required.
21.	Drills shall either be operated with dust extractors or equipped with water injection system.	The mine will be worked by means of opencast mechanized method of mining using pay-loader, dozer and dumper. No drilling and blasting will be required.
22.	Effective safeguard measures should be taken to control the fugitive emissions so as to ensure that RSPM (PM10 and PM 2.5) levels are within prescribed limits.	During operations effective safeguard measures will be taken to control the fugitive emission upon start of mining operation of Topailore lease.
23.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project are carried out and records maintained for Duarguiburu Mining Lease of Gua Ore Mines. The same practice will be followed for Topailore Mining lease of Gua Ore Mines.
24.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, septic tanks, safe drinking water, medical health care etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	In Gua Ore Mines most of the construction labour are hired from the local villages and only few are being hired from outside, for which housing facilities along with necessary infrastructure are being provided at the existing colony of the mines.
25.	Proper Safety measures as per statutory requirement are to be implemented around the mined out pit prior to closure of site.	Proper Safety measures as per statutory requirement will be implemented around the mined out pit prior to closure of site.
26.	A final mine closure plan along with corpus fund duly approved by Competent Authority shall be submitted to the Jharkhand state Pollution Control Board, Ranchi and the concerned DMO in advance to the final closure for approval.	Indian Bureau of Mines (IBM), Ranchi has approved the Modification of Review of Mining Plan & Progressive Mine Closure Plan (PMCP) for period from 2023-24 to 2026-2027 vide letter No. RAN/WESTSINGHBHUM/Fe/MMP-5/2023-24 dated

General Manager (Mines) & E&I
SAIL-BSL, Gua Ore Mines



SL.	CONDITION	COMPLIANCES
		05.09.2023. After complete exhaustion of mineral from the lease, Final Mine Closure Plan (FMCP) will be prepared and get it approved from the Competent Authority i.e. Indian Bureau Of Mines. Further the measures approved in the FMCP will be implemented at the cost of SAIL.
27.	Consent to Operate should be obtained from JSPCB before starting production from the Mine.	Consent to Establish (CTE) and Consent to Operate was granted by JSPCB under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, vide Ref No.: JSPCB/HO/RNC/CTE-14995189/2023/4 dated 05.01.2023 and vide reference no. JSPCB/HO/RNC/CTO-17134844/2024/73 dated 17.01.2024 respectively. CTO is valid till 31.12.2025.
<u>B. General Conditions:</u>		
1.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Agreed. There will be no change in mining technology and scope of working without prior approval of the Ministry of Environment & Forest. The Amendments made in Environmental Clearance (EC) Order No. J-11015/272/2011-IA.II (M) dated 19.05.2020 and Order No. EC/SEIAA/2022-23/2664/2022/299 dated 13.12.2022 of Topailore Iron Ore Mining Project of Gua Ore Mines which will be strictly followed by Gua Ore Mines.
2.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste will be made. ROM production will be kept within permitted capacity in the EC/ approved Review of Mining Plan & PMCP.
3.	The project proponent shall maintain register for production and dispatch and submit return to the Board.	Register for production and dispatch will be maintained once the production starts from the mines also periodic return will be



SL.	CONDITION	COMPLIANCES
		submitted to the Board.
4.	The project proponent shall not cut trees/ carry out tree felling in leased out area without the permission of competent authority.	Permission from competent authority will be taken for tree cutting / tree felling as and when required.
5.	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 microns i.e. PM10 and NOx monitoring. Location of the 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.	Since Topailore mining lease is one of the four mining lease of Gua Ore Mines, ambient locations will be same as for the Duarguiburu Mining lease. Ambient Air quality monitoring at four locations is being carried out regularly and reports are being submitted to Jharkhand State Pollution Control Board. The latest air quality monitoring reports are enclosed as Annexure-2 .
6.	Regular monitoring of ground water level & quality should be carried out in & around the mine lease by establishing a network of existing wells and constructing new piezometers during the operation. The monitoring should be carried out four times in a year i.e. January, April-May, August, November and the data thus collected may be sent regularly to Jharkhand State Pollution Control Board, Ranchi and its nearest Regional Office / Ground Water Directorate, Government of Jharkhand / Central Ground Water Board / Authority.	Four open wells have been selected all around the Gua Ore Mines viz, (i) Guasai – Forest Bungalow, (ii) Ghatkuri Village, (iii) Chota Nagra-Baihatu Village & (iv) Baraiburu village Near Pool, for regular monitoring of ground water levels & quality. Further, three nos. of real time ground water level monitoring system (Piezometer) have been installed and commissioned, one at Forest Bungalow, Gua, and other two at DB and DB annexe buildings of Gua Ore Mines and data of the same is being maintained.
7.	The project proponent shall make all internal roads pucca and shall maintain a good housekeeping by regular cleaning and wetting of the haul roads and the premises. Fugitive dust emission from all sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Most of the internal roads are made pucca. Good housekeeping is being maintained by regular cleaning and wetting of the haul roads and the premises. Effective measures have been taken to control fugitive dust within the prescribed standards. Water spraying arrangement on haul roads and other strategic points will be provided and the same will be properly maintained.
8.	Measures should be taken for control of noise levels below 85 dB (A) in	Measures for control of noise levels are being taken regularly to

General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



SL.	CONDITION	COMPLIANCES
	the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs	maintain the noise levels below 85 dB(A). Workers engaged in operations of HEMM; Ore Crushing & Screening areas, are being provided with ear plugs / muffs and are motivated time to time to use the safety equipments for the whole period of their engagement in work.
9.	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of effluent from workshop.	Necessary provisions for treatment & recycling of effluents from the proposed beneficiation plant will be taken during the commissioning of Beneficiation Plant. Installation of oil and grease trap along with vehicle washing ramp, maintenance bay and covered storage yard for proper handling of hazardous waste for the workshop effluents will be practiced as done in Duarguiburu lease.
10.	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Personal Protective Equipment (PPE) i.e. dust masks are being provided to all the workers engaged in the dust prone areas i.e. excavation & loading areas, ore handling plants, stacking & loading areas etc. Suitable training on safety and health aspects is being given on regular basis. Occupational health surveillance program are being conducted regularly.
11.	Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Dispensary facilities for First Aid shall be provided at site.	Personal Protective Equipment (PPE) i.e. dust masks are being provided to all the workers engaged in the dust prone areas i.e. excavation & loading areas, ore handling plants, stacking & loading areas etc. Suitable training on safety and health aspects is being given on regular basis. Occupational health surveillance programs are being conducted periodically to observe any contractions due to exposure to dust so that corrective measures will be taken, if needed. Dispensary facilities for First Aid will be provided at site. Further, PME in every 3 years for person attaining age of 45 years & every 5 years for persons below 45 years are

[Handwritten signature]



SL.	CONDITION	COMPLIANCES
		being done.
12.	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization	Environmental Management Cell (including laboratory) having qualified personnel has already been established at the Gua Ore Mine. This cell is headed by a General Manager who reports directly to head of Gua Ore Mines i.e. Chief General Manager (Mines).
13.	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Jharkhand state Pollution Control Board, Ranchi. PP shall carry out CSR activities as per Government Guidelines. (% of profit/turnover).	Agreed to. Funds earmarked for environmental protection measures at the mine are booked separately and not being diverted for other purpose.
14.	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar	Funds earmarked for environmental protection measures at the mine are booked separately and not being diverted for other purpose. Year wise expenditure is being reported to the Ministry of Environment and Forests and its Regional Office located at Ranchi.
15.	The Jharkhand State Pollution Control Board, Ranchi directly or through its Regional Office, shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer(s) by furnishing the requisite data / information/ monitoring reports.	Agreed. Full cooperation will be provided to the JSPCB officer(s) by furnishing the requisite data / information/ monitoring reports.
16.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by email) to the Jharkhand state Pollution Control Board, Ranchi and to its concerned Regional Office.	Agreed. Six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by email) are being submitted to the Jharkhand State Pollution Control Board, Ranchi and to its concerned Regional Office.

General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



SL.	CONDITION	COMPLIANCES
17.	The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Jharkhand state Pollution Control Board, Ranchi and to its concerned Regional Office. The criteria pollutant levels namely; SPM, RSPM, SO ₂ , NO _x (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the company in the public domain.	Six monthly compliance reports on the status of implementation of environmental safeguards are being submitted timely to MoEF&CC, New Delhi, Regional Office – MoEF&CC, Ranchi, Central Pollution Control Board and State Pollution Control Board. Copy of the compliance report including environmental quality data will be uploaded to the SAIL web site i.e. www.sail.co.in .
18.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent. JSPCB should display a copy of the clearance letter at the Regional Office, District Industry Centre and DC's, Circle Officer's Office for 30 days. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the Jharkhand State Pollution Control Board.	Copies of the Environmental Clearance have been sent to local Member of Panchayat & Zila Parisad. The clearance letter has been put on the Company website i.e. www.sail.co.in . Advertisement werepublished in two (2) daily newspapers (Dainik Jagran Daily, Jamshedpur Edition on 30.07.2015 and The Telegraph Daily, Ranchi & Jamshedpur Edition on 01.09.2015). Also intimated to Local Zilla Parishad Members, Gram Panchayat Members, Mainky & Mundas etc. In addition to that, EC Amendment Order No. J-11015/272/2011-IA.II (M) dated 19.05.2020 of MoEFCC, New Delhi has been published for advertisement on Times of India Newspaper, Jharkhand edition and Prabhat Khabar (Hindi) in Jamshedpur and Ranchi edition on 13.06.2020. The clearance letter has been put on the Company website i.e. www.sail.co.in
19.	The environmental statement for each financial year ending 31st October in Form V as is mandated to be submitted by the project proponent to the Jharkhand State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along the status of compliance of EC conditions and shall also to the concerned Regional Office of	Agreed. Once, the mining operation starts, the environmental statement for each financial year ending 31st March in Form V are being submitted to the Jharkhand State Pollution Control Board. The same will be put on the website of the company along the status of compliance of EC conditions and we will also send the copy to concerned Regional Office of JSPCB by e- mail.



SL.	CONDITION	COMPLIANCES
	JSPCB by e- mail.	
20.	All statutory clearance shall be obtained before start of mining operations.	Agreed. All statutory clearance will be obtained before start of mining operations.
<u>C. Other Points</u>		
1.	The Authority reserve the right to add any new condition or modify the above conditions or to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority of for that matter for any other Administrative reason.	Agreed.
2.	Failure to comply any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.
3.	The Environmental Clearance accorded shall be valid for the period of renewal of lease (generally 20 years) for life of mine or for 30 years whichever is less. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance.	Agreed. Production rate will be maintained as per the approved Environmental Clearance / EC amendment order.
4.	In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.	Agreed.
5.	The above stipulations would be enforced among others under the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention &Control of Pollution) •Act, 1981, the Environment (Protection) Act,	Agreed.

General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



SL.	CONDITION	COMPLIANCES
	1986, Hazardous Wastes (Management, Handling and Tran boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Jharkhand and any other Court of Law relating to the subject matter.	
6.	Any Appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010	Agreed.

Note: - The Amendments made in Environmental Clearance (EC) of Topailore Iron Ore Mining Project of Gua Ore Mines vide Order No. J-11015/272/2011-IA.II (M) dated 19.05.2020 and Order No. EC/SEIAA/2022-23/2664/2022/299 dated 13.12.2022 will be strictly followed by Gua Ore Mines.

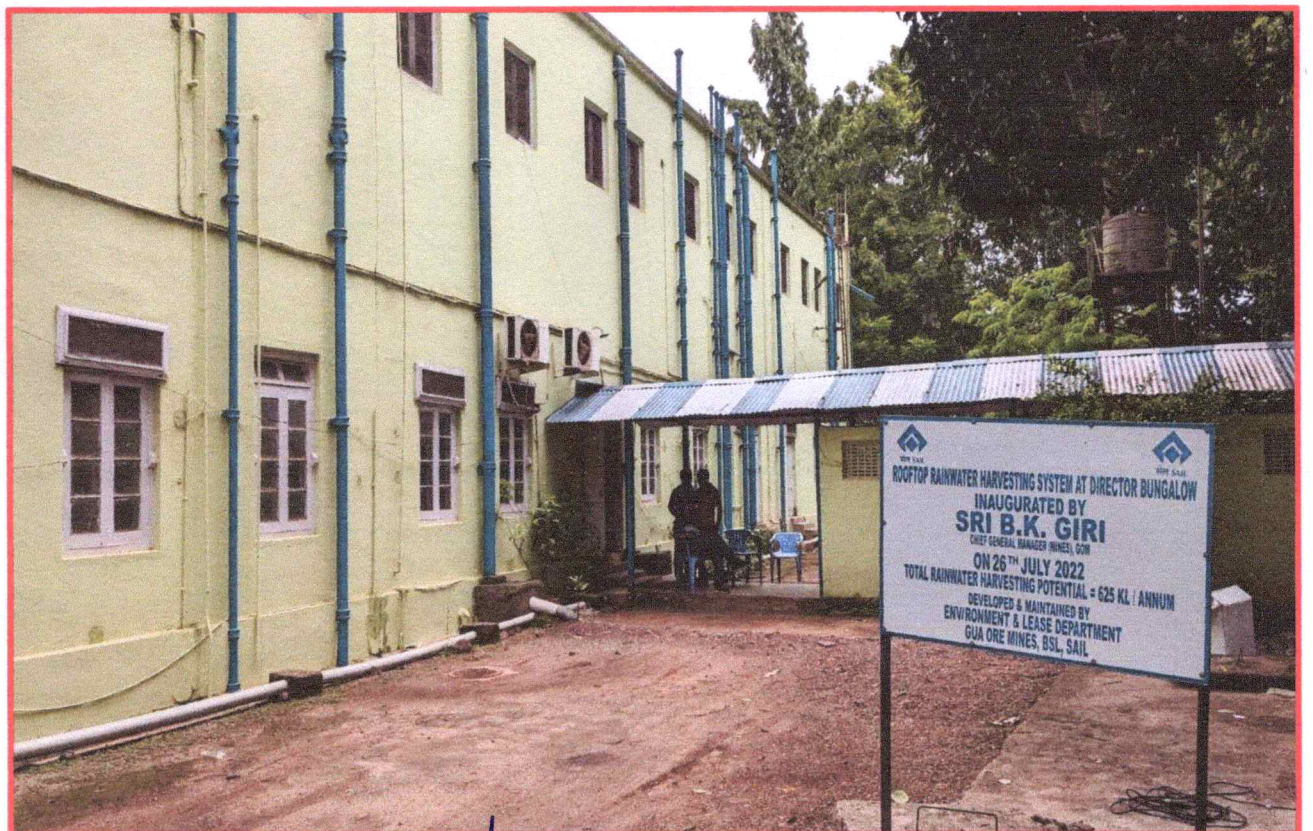
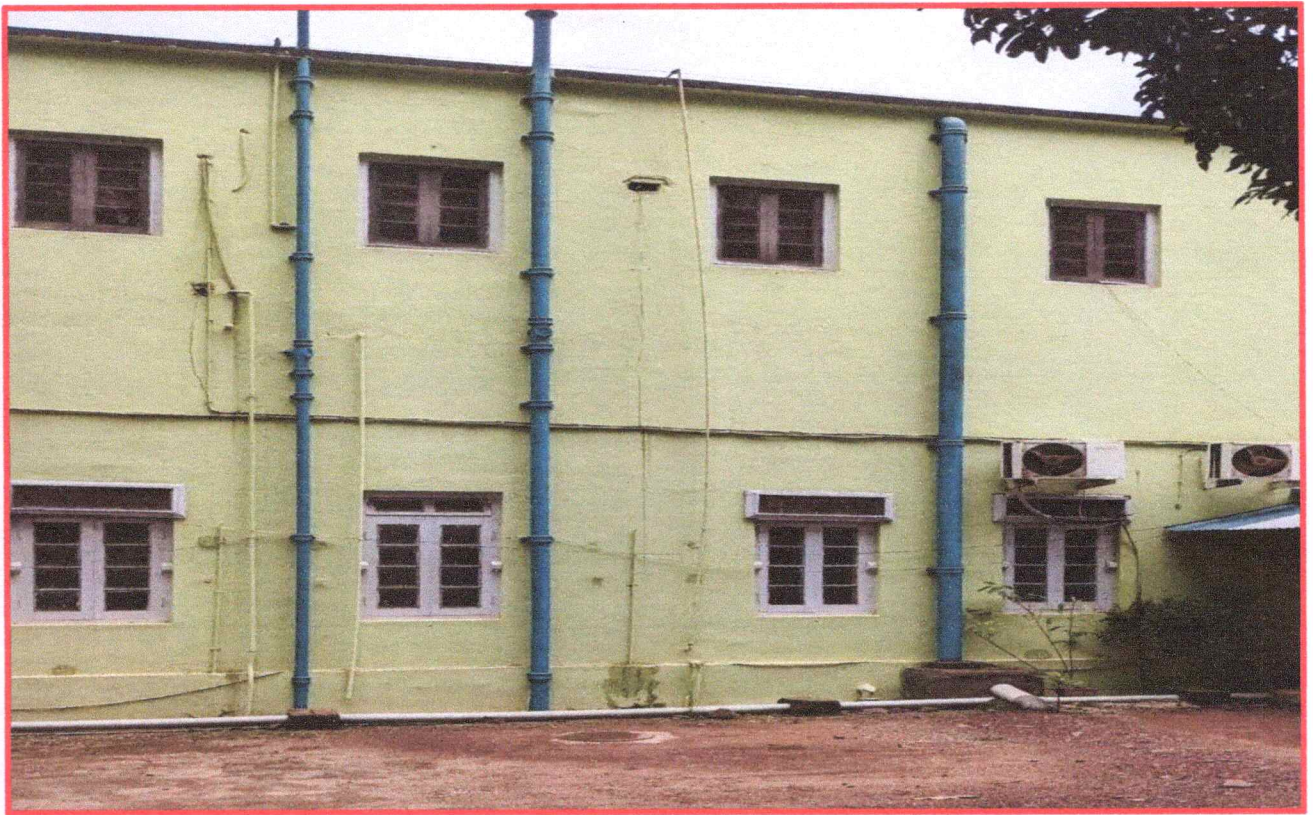
GENERAL MANAGER (MINES) AND E&L
GUA ORE MINES
BOKARO STEEL PLANT
STEEL AUTHORITY OF INDIA LIMITED (SAIL)
General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines

Annexure-1

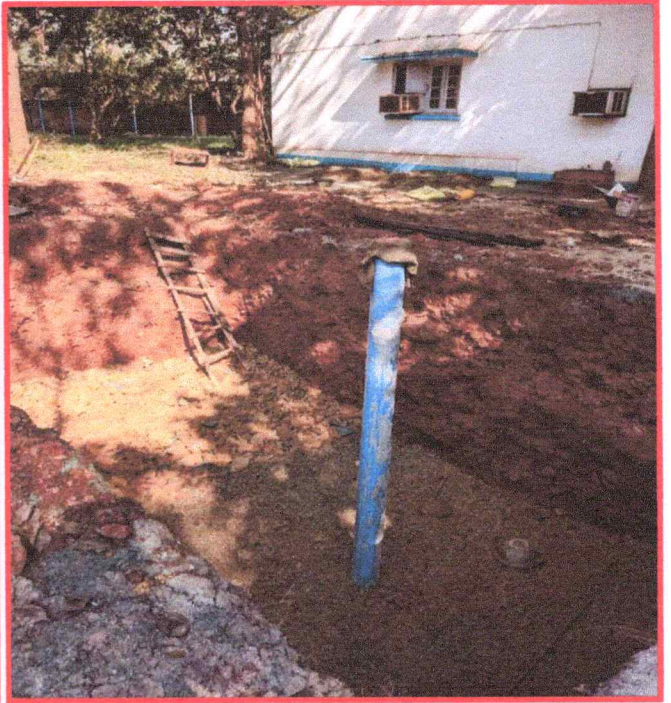
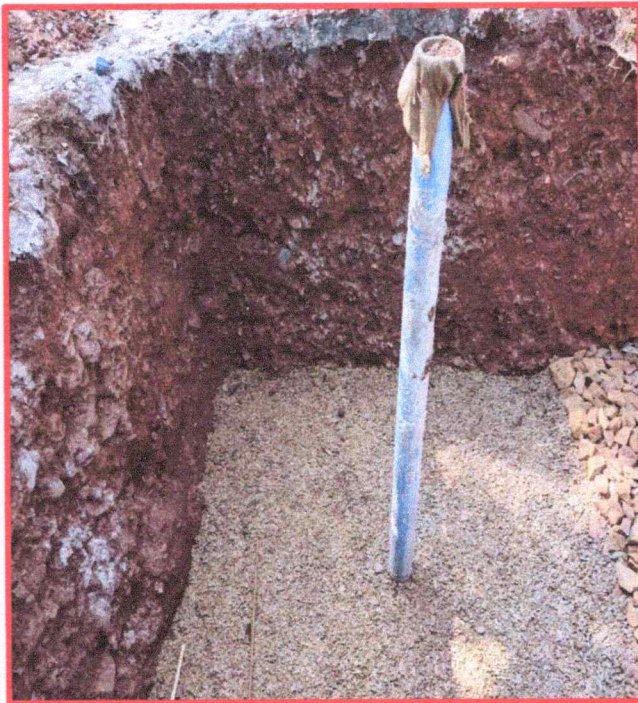
Photographs showing 03 nos. rooftop rainwater harvesting through recharge pit cum shaft installed with realtime groundwater level monitoring system at Director Bungalow and DB annexe buildings of Gua Ore Mines.



[Signature]
General Manager (Mines) & E&I
SAIL-BSL, Gua Ore Mines




 General Manager (Mines) & E&L
 SAIL-BSL, Gua Ore Mines



Photos: Photos of recharge pit cum shaft during construction period


General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



JHARKHAND STATE POLLUTION CONTROL BOARD
ADITYAPUR, JAMSHEDPUR

AMBIENT AIR QUALITY REPORT (R&D)

Lab. Ref. No. - 170/2024

Name of the Industry

:- M/s Duarguiburu Iron Ore Mining Lease,
M/S sail Gua Ore Mines.
PO- Gua, Dist.- Weas Singhbhum

No. of Sampling point
Sampling Position:

1. Near Club
2. Near Lab.
3. Near Mines Canteen

Date of Sampling

:- 03.04.2024

Weather Condition

:- Clear

Time

SO₂

NO_x

RSPM

Norms in µg/m³
SO₂ - 80
NO_x - 80
RSPM - 100

Point- 1

09.00 AM TO 01.00 PM	26.31	33.20	102.84
01.00 PM TO 05.00 PM	21.92	28.19	
05.00 PM TO 09.00 PM	24.12	30.70	83.82
09.00 PM TO 01.00 AM	18.64	24.43	
Maximum	26.31	33.20	102.84
Average	22.75	29.13	93.33

Point-2

09.15 AM TO 01.15 PM	32.34	40.10	109.50
01.15 PM TO 05.15 PM	33.28	45.13	
05.15 PM TO 09.15 PM	34.53	42.60	88.12
09.15 PM TO 01.15 AM	29.60	36.96	
Maximum	34.53	45.13	109.50
Average	33.44	41.35	98.81

Point- 3

09.40 AM TO 01.40 PM	27.41	34.46	98.11
01.40 PM TO 05.40 PM	31.25	38.84	
05.40 PM TO 09.40 PM	25.21	31.95	79.16
09.40 PM TO 01.40 AM	23.02	29.44	
Maximum	31.25	38.84	98.11
Average	26.72	33.67	88.64

Note :- All values are expressed in Micro gram/cubic meter.

Remarks :- The value of all parameters were observed within the limit prescribed

[Signature]
13/04/2024

ASO
Jamshedpur

[Signature]
Regional Officer
Jamshedpur

[Signature]
15/04/2024
Board Analyst

[Signature]
General Manager (Mines) & E&I.
SAIL-BSL, Gua Ore Mines



JHARKHAND STATE POLLUTION CONTROL BOARD
ADITYAPUR, JAMSHEDPUR

AMBIENT AIR QUALITY REPORT (R&D)

Lab. Ref. No. 170/2024

Name of the Industry

M/s Duarguiburu Iron Ore Mining Lease,
M/S sail Gua Ore Mines,
PO- Gua. Dist.- Weas Singhbhum

No. of Sampling point
Sampling Position:

4. Near D.G. Area
5. Near WTP
6. Near Village Hirzi Hutting

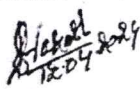
Date of Sampling :- 03.04.2024

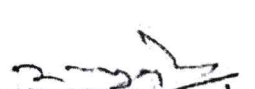
Weather Condition :- Clear


Time	SO ₂	NO _x	RSPM	Norms in µg/m ³ SO ₂ - 80 NO _x - 80 RSPM - 100
Point- 1				
10.30 AM TO 02.30 PM	29.05	36.34	104.82	
02.30 PM TO 06.30 PM	34.53	44.94		
06.30 PM TO 10.30 PM	32.34	41.66	75.16	
10.30 PM TO 02.30 AM	24.12	30.70		
Maximum	34.53	44.94	104.82	
Average	30.01	38.42		
Point-2				
10.45 AM TO 02.45 PM	23.02	28.82	84.34	
02.45 PM TO 06.45 PM	19.73	25.06		
06.45 PM TO 10.45 PM	16.44	21.30	70.50	
10.45 PM TO 02.45 AM	18.09	23.18		
Maximum	23.02	28.82	84.34	
Average	19.32	24.59	77.42	
Point- 3				
11.00 AM TO 03.00 PM	16.99	21.93	79.16	
03.00 PM TO 07.00 PM	13.15	17.54		
07.00 PM TO 11.00 PM	14.80	19.42	67.12	
11.00 PM TO 03.00 AM	11.51	15.66		
Maximum	16.99	21.93	79.16	
Average	14.11	18.64	73.14	


Note :- All values are expressed in Micro gram/cubic meter.

Remarks :- The value of all parameters were observed within the limit prescribed


ASO
Jamshedpur


Regional Officer
Jamshedpur 15/04/24


Board Analyst 15/04/2024


General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



JHARKHAND STATE POLLUTION CONTROL BOARD
REGIONAL OFFICE-CUM-LABORATORY, MB/15, NEW HOUSING COLONY
ADITYAPUR, JAMSHEDPUR

Lab. Ref. No- 171/2024

NOISE LEVEL

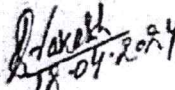
The Ambient Noise Level report at various location inside the premises of

M/s Duarguiburu Iron Ore Mining Lease, M/S SAIL Gua Ore Mines, Gua, Dist. - West Singhbhum taken on 03.04.2024

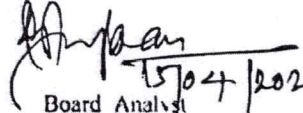
From 12.30 PM to 01.30 PM

Sl. No.	Location	Status of operation of Plant	Prescribed limit in day time	Noise Level dB(A)
1	Near Club	Operation	75 dB(A)	66.5
2	Near Lab.	- Do -	75 dB(A)	72.8
3	Near Mines Canteen	- Do -	75 dB(A)	58.3
4	Near D.G Area	- Do -	75 dB(A)	74.2

Remarks: The value of Noise Level at all the point were observed within the limit prescribed.


ASO
Jamshedpur.


Regional Officer
Jamshedpur.


Board Analyst


General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



Sabz Care
Environmental Consultancy Pvt. Ltd.



TC-9948



lets start thinking about nature for tomorrow

TEST REPORT

Unique Lab Report No. (ULR No.)	TC994824000001091F		
Name of Customer	Duarguiburu Iron Ore Mining Lease, M/s SAIL, Gua Ore Mines	JSPCB Application No.	20202157 (Date- 18.09.2024)
Address	Gua Ore Mines, SAIL, Post – Gua Dist – West Singhbhum, Jharkhand	Particular of the Plant	Iron Ore Mines
Discipline	Chemical	Group	Atmospheric Pollution
Date of Sampling	21.09.2024 to 22.09.2024	Sample Collected By	Ranjeet Yadav & Team
Sample Receiving Date	24.09.2024	Sample Condition	Sealed and Preserved
Sample Details	Ambient Air	Sampling Plan	SCECPL/SOP/AA/01
Sampling Method	IS 5182 and CPCB Air Manual Volume 1 (NAAQM/36/2012-13)		
Type of Sample	Suspended Dust and Gases	Sample Drawn By	Sabz Care Lab
Sample ID	SCECPL/TR/24/241/AA-324/01-03	Plant Status	Operational
Period of Analysis	24.09.2024 to 25.09.2024	Report Release Date	01.10.2024
Meteorological Information	Average Ambient Temperature : 29.5°C, Barometric Pressure :1006 mBar, Relative Humidity : 72% Weather Condition – Clear		

A. GENERAL INFORMATION

Location of Sampling: Location-1: Near Main Canteen (Coordinates- 22°12'54.86"N to 85°21'29.63"E)
Location-2: Near Environmental Lab (Coordinates- 22°12'49.08"N to 85°22'38.24"E)
Location-3: Near D.G. Area (Coordinates- 22°12'46.51"N to 85°22'35.68"E)

Duration of Sampling: 24 hours

B. TEST RESULTS

S.N.	PARAMETERS	UNIT	TEST METHOD	RESULTS (Location-1)	RESULTS (Location-2)	RESULTS (Location-3)	Requirements as per NAAQS 2009
1.	Particulate Matter as PM _{2.5}	µg/m ³	IS 5182 (Part 24)	37.81	39.55	41.34	60 (µg/m ³)
2.	Particulate Matter as PM ₁₀	µg/m ³	IS 5182 (Part 23)	84.15	85.45	89.81	100 (µg/m ³)
3.	Sulphur Dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	17.40	18.38	20.59	80 (µg/m ³)
4.	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	20.33	22.46	24.60	80 (µg/m ³)

Remarks: The ambient air quality with respect to Particulate matters, SO₂ and NO₂ are within the prescribed National Ambient Air Quality Standard.

- Samples will be destroyed after 15 days from date of issues of the Test Report subject to nature of preservation. Samples will be preserved as per the standard method.

*** END OF REPORT ***

Authorized Signatory
Piyush
Quality Manager
(Piyush Ranjan)
11/10/2024

Registered Office : Aarti Bhawan, Bawan Bighas, PO- Madhupur, Dist-Deoghar-815353 (Jharkhand)
Contact : 09334315731, 07563048389, e-mail : scecpmdp@gmail.com



MSME
सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES

General Manager (mines) & E&L
SAIL-BSL, Gua Ore Mines



Sabz Care
Environmental Consultancy Pvt. Ltd.



lets start thinking about nature for tomorrow

TEST REPORT

Unique Lab Report No. (ULR No.)	TC994824000001092F		
Name of Customer	Duarguiburu Iron Ore Mining Lease, M/s SAIL, Gua Ore Mines	JSPCB Application No.	20202157 (Date- 18.09.2024)
Address	Gua Ore Mines, SAIL, Post – Gua Dist – West Singhbhum, Jharkhand	Particular of the Plant	Iron Ore Mines
Discipline	Chemical	Group	Atmospheric Pollution
Date of Sampling	22.09.2024 to 23.09.2024	Sample Collected By	Ranjeet Yadav & Team
Sample Receiving Date	24.09.2024	Sample Condition	Sealed and Preserved
Sample Details	Ambient Air	Sampling Plan	SCECPL/SOP/AA/01
Sampling Method	IS 5182 and CPCB Air Manual Volume 1 (NAAQM/36/2012-13)		
Type of Sample	Suspended Dust and Gases	Sample Drawn By	Sabz Care Lab
Sample ID	SCECPL/TR/24/241/AA-325/01-03	Plant Status	Operational
Period of Analysis	24.09.2024 to 25.09.2024	Report Release Date	01.10.2024
Meteorological Information	Average Ambient Temperature : 29.5°C, Barometric Pressure :1006 mBar, Relative Humidity : 72% Weather Condition – Clear		

A. GENERAL INFORMATION

Location of Sampling: Location-1: Near Gua Club (Coordinates- 22°12'42.57"N to 85°22'53.57"E)
Location-2: Near WTP Area (Coordinates- 22°12'13.11"N to 85°22'39.22"E)
Location-3: Near Hirzi Hutting (Coordinates- 22°11'37"N to 85°22'53"E)

Duration of Sampling: 24 hours

B. TEST RESULTS

S.N.	PARAMETERS	UNIT	TEST METHOD	RESULTS (Location-1)	RESULTS (Location-2)	RESULTS (Location-3)	Requirements as per NAAQS 2009
1.	Particulate Matter as PM _{2.5}	µg/m ³	IS 5182 (Part 24)	35.85	34.10	30.70	60 (µg/m ³)
2.	Particulate Matter as PM ₁₀	µg/m ³	IS 5182 (Part 23)	76.24	72.85	71.55	100 (µg/m ³)
3.	Sulphur Dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	16.67	15.69	13.48	80 (µg/m ³)
4.	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	19.52	18.45	16.65	80 (µg/m ³)

Remarks: The ambient air quality with respect to Particulate matters, SO₂ and NO₂ are within the prescribed National Ambient Air Quality Standard.

- Samples will be destroyed after 15 days from date of issues of the Test Report subject to nature of preservation. Samples will be preserved as per the standard method.

Authorized Signatory

Piyush
01/10/2024
Quality Manager
(Piyush Ranjan)

*** END OF REPORT ***

Registered Office : Aarti Bhawan, Bawan Bighas, PO- Madhupur, Dist-Deoghar-815353 (Jharkhand)
Contact : 09334315731, 07563048389, e-mail : scecpimdp@gmail.com



MSME
सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES

[Signature]
General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines



Sabz Care
Environmental Consultancy Pvt. Ltd.



TC-9948



let's start thinking about nature for tomorrow

TEST REPORT

Unique Lab Report No. (ULR No.)	TC99482400001093F		
Name of Customer	Duargiburu Iron Ore Mining Lease, M/s SAIL, Gua Ore Mines	JSPCB Application No.	20202157 (Date- 18.09.2024)
Address	Gua Ore Mines, SAIL, Post – Gua Dist – West Singhbhum, Jharkhand	Particular of the Plant	Iron Ore Mines
Discipline	Chemical	Group	Atmospheric Pollution
Date of Study	21.09.2024 to 22.09.2024	Sample Collected By	Ranjeet Yadav & Team
Sample Receiving Date	24.09.2024	Time of Duration	24 Hours
Sample ID	SCECPL/TR/24/240/NR-201/01-04	Sample Drawn By	Sabz Care Lab
Sampling Plan	SCECPL/SOP/NOISE/01	Data Analysis Date	23.09.2024
Sample Details	Ambient Noise	Plant Status	Operational
Sampling Method	IS:9989-1981 (Reaffirmed-2020)	Report Release Date	01.10.2024
Meteorological Information	Average Ambient Temperature : 29.5°C, Barometric Pressure :1006 mBar, Relative Humidity : 72% Weather Condition – Clear		

Limit in Leq dB(A)

(CENTRAL POLLUTION CONTROL BOARD, MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE, GOVERNMENT OF INDIA)

PERMISSIBLE NOISE EXPOSURE FOR INDUSTRIAL WORKERS

S.N.	CATEGORY OF AREA	DAY TIME	NIGHT TIME
1.	Industrial Area	75	70
2.	Commercial Area	65	55
3.	Residential Area	55	45
4.	Silence Zone	50	40

Exposure time (in hours per day)	Limit in dB(A)
8	90
4	93
2	96
1	99
1/2	102
1/4	105
1/8	108
1/16	111
1/32	114

*Day time is reckoned in between 6:00 A.M. & 10:00 P.M.

* Night time is reckoned in between 10:00 P.M. & 6:00 A.M.

AMBIENT NOISE QUALITY REPORT

Sampling Location	NOISE LEVEL IN dB(A)				
	Minimum	Ld-Mean (Day)	Ln-Mean (Night)	Leq Mean	Maximum
1. Near Environmental Lab (Coordinates- 22°12'49.08"N to 85°22'38.24"E)	46.5	67.1	54.2	66.4	72.3
2. Near Main Canteen (Coordinates- 22°12'54.86"N to 85°21'29.63"E)	36.4	56.7	43.1	55.8	61.0
3. Near Gua Club (Coordinates- 22°12'42.57"N to 85°22'53.57"E)	35.7	52.3	37.2	51.1	58.0
4. Near Gua Hospital (Coordinates- 22°12'39.87"N to 85°22'58.63"E)	31.1	49.5	36.9	48.8	54.5

Remarks- Noise level is well within the standard specified limit for Silence Zone.

- dB(A) L_d & L_n denotes the time weighted average of the level of sound in decibels on scale(A) in day and night respectively and L_{eq} denotes average of 24 hours which is relatable to human hearing.



Authorized Signatory

Quality Manager
(Piyush Ranjan)

*** END OF REPORT ***

Registered Office : Aarti Bhawan, Bawan Bighas, PO- Madhupur, Dist-Deoghar-815353 (Jharkhand)
Contact : 09334315731, 07563048389, e-mail : scecpmdp@gmail.com



MSME
सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES

General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines

Gua Ore Mines
Environment Management Cell

Ambient Air Quality Monitoring Report

Period: April, 2024 to September, 2024

Location	PM ₁₀ (µg/m ³)		
	Min	Max	Average
Near Hospital	31.8	51.5	41.3
Near Environment & QC Lab	46.4	72.6	57.5
Near Gua Club	32.6	51.4	42.1
Near Time Office	51.4	77.6	63.9
Standard as per NAAQS			100
Location	PM _{2.5} (µg/m ³)		
	Min	Max	Average
Near Hospital	14.6	26.6	20.3
Near Environment & QC Lab	22.8	36.8	29.4
Near Gua Club	14.8	26.8	20.5
Near Time Office	29.6	46.4	38.1
Standard as per NAAQS			60
Location	SO ₂ (µg/m ³)		
	Min	Max	Average
Near Hospital	6.8	12.1	9.4
Near Environment & QC Lab	8.3	12.2	10.2
Near Gua Club	6.9	13.2	9.9
Near Time Office	8.7	14.4	11.6
Standard as per NAAQS			80
Location	NO _x (µg/m ³)		
	Min	Max	Average
Near Hospital	6.8	9.8	8.3
Near Environment & QC Lab	8.7	12.8	10.5
Near Gua Club	6.6	10.2	8.4
Near Time Office	8.6	12.8	10.6
Standard as per NAAQS			80

(Alok Kumar Yadav)

Sr. Manager (F&E)

ALOK KUMAR YADAV

व. प्रबंधक (वन एवं पर्यावरण) / Sr. Manager (Forest & Env.)
सेल, बोकारो इस्पात संयंत्र / SAIL - Bokaro Steel Plant
गुआ अयस्क खान / GUA ORE MINES

EC Compliance H1-2024-25

संस्थान / Dist.: Singhbhum (W) Jharkhand

(Dharmendra Sethia)

Asst. Manager (Env.)

धर्मेंद्र सेठिया

Dharmendra Sethia

सहायक प्रबंधक (पर्यावरण) / Asst. Manager (Env.)

सेल, बोकारो इस्पात संयंत्र / SAIL BSL JGOM

गुआ अयस्क खान / GUA ORE MINES

पो. गु. 832712 / P.O. - Gua - 832713

जिला सिंहभूम (व.) भारत / Dist. Singhbhum (W) Jharkhand

General Manager (Mines) & E&L
SAIL-BSL, Gua Ore Mines

