

TSJ/EMD/C-10/214/23

Deputy Director General of Forests (C)

Ministry of Environment, Forest and Climate Change Integrated Regional Office, 2nd Floor, Headquarter- Jharkhand State Housing Board Harmu Chowk, Ranchi, Jharkhand – 834002, Ranchi

Subject: Submission of Half Yearly (April'2023 to September'2023) Environment Clearances Compliance Reports (ECCR) for Integrated Municipal Solid Waste Management Facility of Tata Steel Limited at Begunadih, Potka, Jamshedpur, District- East Singhbhum, Jharkhand.

Reference:

1. Environment Clearance of IMSWMF vide MoEF EC Identification no: EC23A037JH170166 dated 13.02.2023

Dear Sir,

This has reference to the captioned subject and cited references. We wish to inform you that we have uploaded the Half Yearly ECCR for the period from April'2023 to September'2023 on MoEF&CC portal http://environmentclearance.nic.in/. Confirmation of the same is attached.

We are herewith submitting the softcopy of the same for your ready reference. You are requested to kindly acknowledgement the same and place in your records. Thanking you

Yours faithfully, For Tata Steel Limited

uteay Kashy op

Utsav Kashyap Head Environment Clearance & Compliance (TSL)

Enclosures as above

Copy to:

- Zonal Officer, Central Pollution Control Board, Southern Conclave, Block 502, 5th and 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700 107
- 2. Member Secretary, Jharkhand State Pollution Control Board, T.A. Division Building, HEC Campus, Dhurwa, Ranchi 834004
- 3. Regional Officer, Jharkhand State Pollution Control Board, Jamshedpur

TATA STEEL LIMITED

Environment Management Jamshedpur 831 001 India Ph: 8092087043 (M) e-mail: utsav.kashyap@tatasteel.com Registered Office: Bombay House, 24 Homi Mody Street, Mumbai 400001 Tel 91 22 66658282 Fax 91 22 66657724 Corporate Identity Number L27100MH 1907PLC000260 Website www.tatasteel.com

29 November 2023

Your application has been Submitted with following details					
Proposal No	IA/JH/INFRA2/410593/2022				
Compliance ID	24649917				
Compliance Number(For Tracking)	EC/COMPLIANCE/24649917/2023				
Reporting Year	2023				
Reporting Period	01 Dec(01 Apr - 30 Sep)				
Submission Date	29-11-2023				
IRO Name					
IRO Email					
State					
IRO Office Address					
Note:- SMS and E-Mail has been sent to , with Notification to Project Proponent.					

S NO	Compliance Condition	Compliance Status				
Α.	Specific Condition					
i	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as Required under the Air (Prevention and Control of pollution) Act,1981 and Water (Prevention and Control of Pollution) Act,1974	Received CTE No: JSPCB/HO/RNC/CTE-15672282/2023/397 dated 30-06-2023				
ii	Air pollution control Viz., gas quencher; treatment with mixture of hydrated lime and activated powder for adsorption of partial acidity and VOCs (if any); bag-filter/ESP for removal of particulate matter; venturi scrubber followed by packed bed scrubber with caustic circulation to neutralize the acidic vapours in flue gases; and demister column for arresting water carry over will be provided to the incinerator. Online pollutant monitoring shall be provided as per CPCB guidelines for monitoring particulate matter, SO2, NOx and CO from the incinerator stack. The Periodical monitoring of Dioxins and Furans in the Stack emissions shall be carried out.	This is not applicable.				
	No tree Can be felled/transplanted unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concern Authority. Old trees should be retained based on girth and age regulations as may be prescribed by the forest Department. Where the tree needs to be cut/transplanted with prior permission from the concerned local Authority, compensatory plantation in the ration of 1:10 (i.e., planting of 10 trees for every one tree that is cut/non survival of any transplanted tree) shall be done and maintained. While raising compensatory plantation it may be ensured that all the native species felled are replaced by the same native species to the extend possible while the non-native species may be replaced by any native species of choice.	No tree felling required. If necessary, prior permission will be taken from the concerned authority.				
iv	Project Proponent shall develop greenbelt in 5 ha of area as committed.	Greenbelt will be developed as per Condition.				
v	Project Proponent shall implement rain rainwater harvesting from rooftop paved area and landscaping areas as committed.	Proposed, the same will developed as per condition				
vi	Project Proponent shall use LED Lamps and Solar panel as energy saving conservation in the project area.	Proposed, the same will be implemented as per condition after commissioning of the project				
vii	The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive should not be used for landscaping.	Proposed, the same will develop as per condition after commissioning of the project				
viii	Analysis of Dioxins and Furans shall be done through CSIR- NIIST Thiruvananthapuram or equivalent NABL Accredited laboratory.	This is not applicable.				

S NO	Compliance Condition	Compliance Status					
Α.	Specific Condition						
ix	Leachates to be collected and utilized within project after proper treatment. Proponent should submit the details regarding the Leachate collection and treatment system to be installed to concerned Integrated Regional Office of the Ministry. Toxicity Characteristic Leaching Procedure (TCLP) test to be performed on leachates.	commissioning of the project.					
x	Fresh water requirement shall not exceed 50KLD during Operational phase. Extraction of ground water shall be subject to the permission of CGWA.	Fresh water requirement will be ensured within 50KLD after commissioning of the project. Application submission to CGWA under Progress for groundwater NOC.					
xi	Treated wastewater of 20KLD shall be recycle within the premises as committed.	We will abide by the condition.					
xii	No Fresh water to be used except for potable use.	We will abide by the condition.					
xiii	Six number of Piezometer wells shall be installed in and around the project site to monitor the GW quality In consultation with SPCB or State Pollution Control Committee/CPCB. Trend analysis of ground water quality shall be carried out each season and information shall be submitted to the SPCB and the regional Office of MoEF & CC.	Monitoring proposed as per plan.					
xiv	GW monitoring for Physio-Chemical parameters to be carried out and record maintained by providing piezometric wells along the flow channel (Up and Down)	Ground water quality and water table level analysed. Report attached as Annexure-1. Piezometer procurement process is in progress. Monitoring proposed as per plan.					
xv	Ambient air quality monitoring shall be carried out in and around the landfill site at up wind and downwind locations.	Base line data available for air analysis. Report attached as Annexure-1.					
xvi	The depth of the landfill site shall be decided based on the ground water table at the site to avoid contamination of the ground water	Hydro Geological studies done. Depth of landfill site will be designed as per guidelines. Report attached as Annexure-1.					
xvii	Environmental Monitoring Programme shall be implemented as per EIA report and guidelines prescribed by CPCB for hazardous waste facilities. Periodical ground water/soil monitoring to check the contamination in and around the site shall be carried out.	EIA Report Prepared and same submitted to MoEF& CC. Groundwater and soil monitoring to check the contamination will be done after commissioning of project.					
xviii	The Company shall ensure proper handling of spillages by introducing spill control procedures for various chemicals.	Spillage control measures will be taken at every stage.					
xix	Online real time continuous monitoring facilities shall be provided as per CPCB or State Board Directions.	We will abide by the condition.					
XX	Scrubber water, Leachate water or wheel wash shall be treated properly and recycled to achieve zero liquid discharge.	We will abide by the condition.					

S NO	Compliance Condition	Compliance Status						
Α.	Specific Condition							
xxi	Gas generated in the Landfill should be properly collected, monitored and flared.	As inert materials are being disposed in landfill, gas generation is not expected.						
xxii	Pre-medical check up to carried out on workers at the time of employment and regular medical record to be maintained.	Pre-medical check will be carried out on workers at the time of employment and regular medical records will be maintained.						
xxiii	Emergency plan shall be drawn in consultation with SPCB/CPCB and implemented in order to minimize the hazards to human health or environment from fires, explosion or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil or surface water.	Draft Emergency plan prepared.						
xxiv	Rainwater runoff from the landfill area shall be collected and treated in the LTP.	We will abide by the condition after commissioning of the project.						
xxv	Adequate covering arrangement in site should be done to prevent the runoff of rainwater in the project premises.	Rainwater run-off drain network & storage shall be developed to prevent run-off.						

S NO	Compliance Condition	Compliance Status
В	Standard Condition	
Ι.	Statutory compliance	
i.	The project proponent shall obtain forest clearance under the provision of Forest (Conservation) Act1980, in case of the diversion of forest land for non-forest purpose involved in the project.	Not applicable.
ii	The project proponent shall obtain clearance from National Board for Wildlife, If applicable.	Not applicable.
111	The Project proponent shall prepare a site-specific Conservation plan & Wildlife management plan and approved by the chief wildlife Warden. The recommendations of the approved site-specific conservation Plan /Wildlife management plan shall be implemented in consultation with the state forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-1 species in the study area)	We will abide by the condition as per requirement.
iv	The project proponent shall obtain CTE/Operate under the provisions of under the Air Act,1981 and Water Act,1974 from the concern SPCB.	CTE obtained via JSPCB/HO/RNC/CTE-15672282/ 2023/397, dated 30-06-2023
v	The project proponent shall obtain the necessary permission from the CGWA, in case of drawl of ground water / from the competent authority concern in case of drawn of surface water required for the project	We will abide by the condition as per requirement.
vi	A Certificate of Adequacy of available power from agency supplying power to the project along with the load allowed for the project should be obtained.	Temporary power application submitted to discom JBVNL.

S NO	Compliance Condition	Compliance Status				
B	Standard Condition					
vii	All other statutory clearances such as the approvals for storage of diesel from chief controller of Explosives, Fire department, civil aviation Department shall be Obtained, as applicable by project proponent from the respective competent authorities.	FMA23091500011 on dated 20.09.2023. Other approvals will be taken as per requirement.				
11	Air Quality Monitoring and Preservation					
i	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect standards prescribed in environment (protection)rules 1986 and connected to SPCB AND CPCB online Servers and calibrate this system from time to time according to equipment supplier specification through labs recognised under environment (PROTECTION) act,1986 or NABL accredited laboratories. (For projects involving incineration) to equipment supplier specification through labs recognised under environment (PROTECTION) act,1986 or NABL accredited laboratories. (For projects involving incineration) to equipment supplier specification	r r 33 10 10 10 10 10 10 10 10 10 10				
ii	As proposed, air pollution control device viz. gas quencher; treatment with mixture of hydrated lime and activated powder adsorption of partial acidity and VOCS (if any); bag filter/ESP for removal of particulate matter; venturi scrubber followed by packed bed scrubber with caustic circulation to neutralize the acidic vapours in flue gas; and demister column for arresting water carry over will be provided to the incinerator. Online pollutant monitoring shall be provided as per CPCB guidelines for monitoring particulate matter, S02, NOX and CO from the incinerator stack. the periodical monitoring of dioxins and furans in the stack emission shall be carried out.	This is not applicable.				
iii	Analysis of dioxins and furans shall be done through CSIR- NATIONAL institute for interdisciplinary Science and technology (NIIST) Thiruvananthapuram or equivalent NABL Accredited laboratory.	This is not applicable.				
iv	Incinerator shall be designed as per CPCB guidelines. Energy shall be recovered from incinerator	This is not applicable.				
v	Gas generated in the landfill should be properly collected, monitored and flared.	This is not applicable as only inert materials are being disposed in landfill, so gas generation is not expected.				
vi	The project proponent shall install system to carry out ambient air quality monitoring for common /criterion parameters relevant to the main pollutants released (e.g., PM10 and PM2.5 in reference to SO2 and NOx emissions) within and outside the plant area at least at four location (One within and three outside the plant area at the angle of 120 degree each), covering upwind and downward wind.	Ambient air quality monitoring for common /criterion parameters relevant to the main pollutants released will be done as per plan after commissioning of the project.				
III.	Water Quality Monitoring and Preservation					

S NO	Compliance Condition	Compliance Status					
В	Standard Condition	•					
i.	The project proponent shall install continues effluent monitoring system with respect to standard prescribed in environment (protection) rules 1986 and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under environment	standard prescribed in environment (protection rules 1986.					
	(protection) act,1986 or NABL accredited laboratories. Sufficient number of piezometer wells shall be installed in and around the project site to monitor the ground water quality in consultation with state pollution control board /CPCB.TREND analysis of ground water quality shall be carried out each season and information shall be submitted to SPCB and the regional office of MoEF&CC	Piezometer procurement is in progress. Monitoring proposed as per plan and trend analysis will be carried out.					
iii	The depth of the land fill site shall be decided based on the ground water table at the site.	Hydro Geological studies done. Depth of landfill site will be designed as per guidelines.					
iv	Rainwater runoff from the landfill area and other hazardous waste management area shall be collected and treated in the effluent treatment plant.	We will abide by the condition.					
v	Total freshwater use shall not exceed the proposed requirement as provided in the project details. prior permission from competent authority shall be obtained for use of fresh water.	Fresh water requirement will be as per the proposed requirement. Application submission to CGWA under Progress for groundwater NOC.					
vi	The company shall ensure proper handling of all spillages by introducing spill control procedures for various chemicals.	Spillage control measures will be taken at every stage after commissioning of the project.					
vii	all leachates arising from premises should be collected and treated in the ETP followed by RO.RO rejects shall be evaporated in MEE. toxicity characteristics leaching procedure (TCLP) test to performed on leachates.	We will abide by the condition after commissioning of the project. LTP is proposed at site.					
viii	Scrubber water, leachate water or wheel wash effluent shall be treated in the effluent treatment plant followed by RO to achieve zero liquid discharge.	-					
ix	Sewage treatment plant shall be provided to the wastewater generated from the project. Treated water shall be reuse within the project.	We will abide by the condition after commissioning of the project.					
X	A certificate from the component authority for discharging treated effluent/untreated effluent into the public sewer/disposal/drainage systems along with the final disposal point should be obtained	Zero Effluent Discharge is Proposed					
IV	Waste management						
i	No non-Hazardous waste, as defined under hazardous and other waste (Management and Transboundary Movement) Rules,2016, shall be handled in the premises	We will abide by the condition.					
ii	The Solid wastes shall be segregated, managed and disposed as per the norms of SWM Rules,2016.	We will abide by the condition.					
iii	Any wastes from C&D activates related thereto shall be managed so as to strictly conform to the C&D waste management rules, 2016	Will Implement the same					

S NO	Compliance Condition	Compliance Status				
B	Standard Condition					
iv	A Certificate from the competent authority handling MSW should be obtained, indicating the existing civic capacities of handling and their adequacy to cater to the MSW generated from project.	and we certify that the existing civic capacities of				
v	Transportation					
i	Project should ensure that the site is properly cordoned off from general movement and no unauthorized person or goods permitted to enter the premises. Necessary security provision should be made as a condition in the authorization under the hazardous and other waste (management and transboundary movement) rules,2016 to prevent unwanted access	internal roads sign boards, illumination and deployment of required Security.				
ii	Traffic congestion near the entry and exit point from the roads adjoining the project site shall be avoided. parking should be fully internalized, and no public space should be utilized.	We will abide by the condition				
iii	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 02kms radius of the project is maintained and improved upon after the implementation of the project .This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 02kms radius of the site in different scenarios of the space and time and the traffic management plan shall be duly validate and certified by the state urban development department and the P.W.D/ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments .	same. Will be operated by authorized person only after the implementation of the project				
VI	Green Belt					
i	Green belt shall be developed an area as provided in project details, with native tree species in accordance with forest department. the greenbelt shall inter alia cover the periphery of the project site.	Proposed, the same will be developed as per condition				
ii	Topsoil shall be separately stored and used in the development of green belt.	Proposed, the same will be developed as per condition				
VII	Public Hearing and Human health/safety issues					
i	Emergency Preparation plan based on the Hazard Identification & Risk Assessment HIRA and Disaster management plan shall ne implement.	Emergency Preparation Plan & Standard Working Procedure proposed.				
ii	Provision shall be made for the housing of construction labour within the site all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form temporary structures to be removed after the completion of the project.	We will abide by the condition.				

S NO	Compliance Condition	Compliance Status
	Compliance Condition Standard Condition	Compliance Status
B	Occupational health surveillance of the workers shall be done on regular basis.	We will abide by the condition.
IX	Miscellaneous	
i	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent website permanently. (For projects involving incineration)	The Notice has been advertised in two local newspapers viz. Dainik Jagran (Hindi) and The Avenue Mail (English) on February 17, 2023, and communication to this effect was also sent to the MoEF&CC. Details attached as Annexure-2 .
ii	The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which on shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MOEFCC/SELAA website where it is displayed (for projects in involving only landfill without incineration)	The Notice has been advertised in two local newspapers viz. Dainik Jagran (Hindi) and The Avenue Mail (English) on February 17, 2023, and communication to this effect was also sent to the MoEF&CC. Details attached as Annexure-2 .
iii	The copies of the environmental clearance shall be submitted by the project proponents to the Head of local bodies, Panchayats and Municipal Bodies in addition to the relevant of the Government who in turn has to display the same for 30 days from the date of receipt.	Submitted and acknowledgment attached as Annexure-3.
iv	The project proponent shall upload the status of compliance of the stipulated environment clearance condition, including results of monitored data on their website and update the same on half-yearly basis.	Half yearly EC Compliance report submitted for FY23 H2 via letter no: TSJ/EMD/C-10/093/23 dated 31 May 2023. The same is being displayed on our website <u>https://www.tatasteel.com/corporate/our- organisation/environment/environment- compliance-reports/</u>
V	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balance and to bring into focus any infringements/deviation / violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements /deviation / violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements /deviation / violation of the environmental / forest / wildlife norms / conditions and/or shareholder, s /stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Tata steel has approved Environmental Policy.
vi	A separate environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up Under the control of senior Executive, who will directly report to the head of the organization.	Agreed and noted
vii	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent	Planned as per requirement

S NO	Compliance Condition	Compliance Status
В	Standard Condition	•
	authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action	
	plan shall be reported to the Ministry / Regional Office along with the six-monthly compliance Report.	
viii	Self- environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	We will abide by the condition
ix	The project proponent shall submit six - monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest, and climate change at environment clearance portal.	Half yearly EC Compliance report submitted for FY23 H2 via letter no: TSJ/EMD/C-10/093/23 dated 31 May 2023.
x	The project proponent shall submit the environmental statement for each financial year in Form -V to the concerned State Pollution Control Board as prescribed under the environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Agreed and noted
xi	The criteria pollutant levels namely, PM2.5, PM10, SO2, NOx (ambient levels as well as stack emissions) 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 public domain (in case incineration involved).	This is not applicable
xii	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	We will abide by the condition
xiii	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Agreed and noted
xiv	The project proponent shall abide by all the commitment and recommendations made in the EIA/EMP report, commitment made during public Hearing and also that during their presentation to the Expert Appraisal committee.	EIA Report done for this project. Proposed all activities mentioned in EIA Report.
XV	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and climate change (MoEF&CC).	We will abide by the condition
xvi	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act,1986.	Agreed and noted
xvii	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Agreed and noted

S NO	Compliance Condition	Compliance Status
В	Standard Condition	•
xviii	The Ministry reserves the right to stipulate additional	We will abide by the condition
	conditions if found necessary. The Company in a time	
	bound manner shall implement these conditions.	
xix	The Regional office of this Ministry shall monitor	We will abide by the condition
	compliance of the stipulated condition. The project	
	authorities should extend full corporation to officer (s) of	
	the Regional Office by furnishing the requisite data/ information/monitoring reports.	
xx	The above conditions shall be enforced, inter-alia under	We will abide by the condition
	the provisions of the Water (Prevention & control of	we will ablace by the condition
	pollution) Act, 1974, the Air (Prevention & Control of	
	pollution) Act, 1981, the Environment (Protection) Act,	
	1986, Hazardous and other Wastes (Management and	
	Transboundary Movement) Rules, 2016 and the public	
	Liability Insurance Act, 1991 along with their amendments	
	and Rules and any other orders passed by the Hon'ble	
	Supreme Court of India /High Courts and any other Court of	
	Law relating to the subject matter.	Net Demoired
xxi	Any appeal against this EC shall lie with the National Green	Not Required
	Tribunal, if preferred within a period of 30 days as	
	prescribed under Section 16 of the National Green Tribunal Act,2010.	
	AU,2010.	

<u>AMBIENT AIR QUALITY</u>													
	Location	ΡΜ10 (μg/m ³)		PM2.5(μg/m ³)		SO2 (μg/m ³)			NOχ (μg/m ³)				
Location Code	Location Name	Max	Min	98 th perc	Max	Min	98 th perc	Max	Min	98 th perc	Max	Min	98 th perc
BA1	Upardiha	52.5	41.8	50.8	26.4	21.1	25.9	19.2	16.7	18.8	18.9	13.2	18.5
CA2	Core Zone	48.5	43.2	47.2	24.2	16.9	23.7	12.1	10.5	11.9	16.1	12.6	15.8
BA3	Sukal Bhalki	45.4	43	53.8	25.1	24.7	24.6	14.8	12.6	14.5	16.1	14.3	15.8
BA4	Kuali	61.0	56.8	44.6	29.4	27.1	28.8	13.5	11.7	13.2	15.8	12.5	15.5
BA5	Begunadih	60.5	53.5	58.1	28.2	18.5	27.6	14.2	12.1	13.9	17.1	12.3	16.8
Range Value			61.0-4 2	1.8	29.4-16.9		6.9	19.2-10.5		10.5		18.9-12.3	
NAAQS (No	STANDARD ov 2009)		100			60			80			80	

AMBIENT AID OUALITV

AMBIENT NOISE LEVEL

S.	Monitoring		Result (Leq)	
No.	Stations	Project Site	DAY*	NIGHT*
1.	BN1	Nishchintpur	54	48
2.	CN2	Core Zone	55.6	42.5
3.	BN3	Begunadih	46.5	41.0
4.	BN4	Nishchintpur	49.4	38.6
5.	BN5	Begunadih	57.5	39.2

Sl.	Characteristics	Unit	Desirable	Permissible	GW1	GW2	GW3	GW4
No.			limits (BIS:10500)	limits				
1	Colour	Hazen	-	25	2.0	1.1	1.3	1.8
2	Odour	UO	UO	No relaxation	UO	UO	UO	UO
3	taste	Agreeable	Agreeable	No relaxation	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	5	10	2.1	1.7	1.4	1.6
5	pH			No relaxation	6.8	7.1	7.4	7.3
6	Total hardness as CaCO3	mg/l	300	600	121	210	205	280
7	Iron as Fe	mg/l	0.3	1	0.26	0.30	0.22	0.30
8	Chloride as Cl	mg/l	250	1000	46	58	41	82
9	Residual free chlorine	mg/l	0.2	-	ND	ND	ND	ND
10	Total dissolved solid	mg/l	500	2000	221	301	346	401
11	Calcium as Ca	mg/l	75	200	43	52	56	69
12	Magnesium as Mg	mg/l	30	100	5.3	3.1	4.8	5.1
13	Copper as Cu	mg/l	0.05	1.5	0.001	0.003	0.003	0.006
14	Manganese as Mn	mg/l	0.1	0.3	0.002	0.003	0.002	0.004
15	Sulphate as SO4	mg/l	200	400	41.2	36.2	30.1	46.0
16	Nitrate as NO ³⁻ N	mg/l	45	100	3.1	2.7	4.1	5.3
17	Fluoride as F	mg/l	1	1.5	0.21	0.32	0.23	0.37
18	Phenolic Compound as	mg/l	0.001	0.002	ND	ND	ND	ND
	С6Н5ОН							
19	Mercury as Hg	mg/l	0.001	No relaxation	< 0.001	<0.001	< 0.001	< 0.001
20	Cadmium as Cd	mg/l	0.01	No	< 0.001	< 0.001	< 0.001	< 0.001

CDOUND WATED OUALITY

Sl. No.	Characteristics	Unit	SW1	SW2	SW3	Test	Methods
1.	Colour	-	Colorless	Colorless	Colorless	IS3025:P	ART04:1983
2.	рН	-	7.6	8.2	8.0	IS3025:P	ART11:1983
3.	Odour	-	Agreeable	Agreeable	Agreeable	IS 3025:F	PART16:1984
4.	Chloride as Cl	mg/l	7.5	8.0	8.2	IS 3025:F	ART32:1988
5.	Sulphate as SO ₄	mg/l	2.4	2.5	2.3	IS 3025:F	PART24:1986
6.	Nitrate as NO ₃ - N	mg/l	0.7	0.19	0.2	IS 3025:F	PART34:1988
7.	Temperature	DEG.C	31.0	24	27		
8.	Electrical Conductivity	mS/cm	0.31	0.292	0.22	APHA22nd	Edition(2510 B)
9.	Pottasium	mg/l	1.3	1.40	1.20	APHA-22 nd E	dition(3500-K-B)
10.	Fluoride as F	mg/l	0.2	0.23	0.2	IS 3025:F	PART60:2008
11.	Total Dissolved Solids	mg/l	221	190	200	IS 3025:F	PART16:1984
12.	Calcium as Ca	mg/l	25.0	25.6	25.6	IS 302	5(Part 40)
13.	Magnesium as Mg	mg/l	1.68	1.94	1.84	IS 302	5(Part 46)
14.	Carbonate Alkanity	mg/l	3.5	< 4.0	< 4.0	IS 3025(Part 2	23):1986RA 2009
15.	Bicarbonate Alkanity	mg/l	13.8	144	134	IS 3025(Part 2	23):1986RA 2009
16.	Chemical Oxygen Demand	mg/l	18.6	20.8	20.4	APHA-22 nd	Edition(5220B)
17.	Boron	mg/l	<0.3	< 0.1	< 0.1	IS 302	5 PART 57
18.	Nitrite as NO ₂	mg/l	0.034	0.034	0.034	IS 302	5(Part 34)
19.	Phosphate	mg/l	<0.50	< 0.50	< 0.50	APHA-22 nd Edition(4500)-P-D)
20.	Dissolved Oxygen	mg/l	6.1	5.60	5.50	APHA-22 nd E	lition (4500-0-C)
21.	Ammonia	mg/l	< 0.50	< 0.50	< 0.50	IS 302	5 (Part 34)
22.	Biochemical Oxygen Demand	mg/l	2.5	5.0	4.8	APHA 22 nd Edi	tion-2012(5210B)
23	Sodium	mg/l	7.80	7.80	7.80	APHA-22 nd Ed	lition(3500-Na-B)
24	Total Coliform	MPN/100ml	180	180	180	APHA 2	2 nd Edition
25	Feacal Coliform	MPN/100ml	60	60	60	APHA 2	2 nd Edition
			Remarks				
				-	nusual feature observed		
					during	determination	Nil

SURFACE WATER OUALITY

	SOIL QUALITY					
SI.	Parameter	TT		Location		
SI. No.		Unit	Landfill 1 (S1)	Near site for leachate treatment plant (S2)		
1.	рН		6.61	7.0		
2.	EC	µmhos/cm	122	85		
3.	Bulk Density	g/cc	0.98	1.11		
4.	Available Nitrogen	kg/ha	245	222		
5.	Available P as PO4	kg/ha	98	75		
6.	Available K	kg/ha	245	320		
7.	Water Soluble Sulphates as SO4	mg/kg	63	22		
8.	Organic Matter	%	1.11	0.95		
9.	Organic Carbon	%	0.72	0.45		
10.	Total Iron	%	0.23	1.23		
11.	Manganese	mg/kg	122	162		
12.	Zinc	mg/kg	9.8	10.5		
13.	Boron	mg/kg	9.8	12.6		
14.	Permeability	Cm/Hour		0.25		





Name of Recipient	Acknowledgement
EMD/C-10/034/23	
February 17, 2023	केन्द्रीय भारत शाखा
Deputy Commissioner	et la
Office of Deputy Commissioner	Sartstinen Burn
East Singhbhum	Sarte and a start of
EMD/C-10/035/23	and the
February 17, 2023	
General Manager District Industries Centr e East Singhbhum	A A A A A A A A A A A A A A A A A A A
EMD/C-10/036/23	
February 17, 2023	TIFIED ARE
Special Officer Jamshedpur Notified Area Committee East Singhbhum	2110 21 June 1
EMD/C-10/037/23	
February 17, 2023 Sarpanch Janamdih Gram Panchayat Potka, East Singhbhum	0/27210 07/11/4 E 2729 20102123
EMD/C-10/038/23	
February 17, 2023 Block Development Officer	ZOTZTZZZ POJAKA
Zonal Office, Potka, East Singhbhum	
EMD/C-10/039/23 February 17, 2023 Regional Officer,	The second secon
Jharkhand State Pollution Control Board M.B./15, New Housing Colony, Adityapur	14 + Pe7 un = 0 *