

उपायुक्त –सह– जिला दण्डाधिकारी का कार्यालय, बोकारो
(विधि शाखा)

दिनांक–24.02.2024 को उपायुक्त, बोकारो की अध्यक्षता में आयोजित जिला गंगा समिति (District Ganga committee) की बैठक की कार्यवाही :-

उपस्थिति :-

1. उपायुक्त, बोकारो,
2. वन प्रमण्डल पदाधिकारी, बोकारो,
3. उप विकास आयुक्त, बोकारो,
4. अपर समाहर्ता, बोकारो,
5. अपर नगर आयुक्त, चास
6. कार्यपालक पदाधिकारी, फुसरो नगर परिषद्
7. असैनिक शल्य चिकित्सक –सह– मुख्य चिकित्सा पदाधिकारी,
8. कार्यपालक अभियन्ता, सड़क निर्माण विभाग, रोड डिविजन, बोकारो,
9. कार्यपालक अभियन्ता, ग्रामीण कार्य विभाग, कार्य प्रमण्डल, बोकारो,
10. कार्यपालक अभियन्ता, पेय जल एवं स्वच्छता प्रमण्डल, चास,
11. कार्यपालक अभियन्ता, लघु सिंचाई प्रमण्डल, बोकारो,
12. क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद, धनबाद,
13. जिला जन सम्पर्क पदाधिकारी, बोकारो

बैठक की कार्यवाही :-

सर्वप्रथम उपायुक्त, बोकारो द्वारा बैठक में उपस्थित सभी सदस्यों से परिचय प्राप्त करते हुए बैठक की कार्यवाही प्रारम्भ की गई एवं बैठक बुलाने की आवश्यकता को बताते हुए, प्रभारी पदाधिकारी, जिला विधि शाखा, बोकारो को माननीय एन0जी0टी0, नई दिल्ली के द्वारा दिये गये निदेशों को उल्लेखित करने का निदेश दिया गया। प्रभारी पदाधिकारी, विधि शाखा द्वारा बताया गया कि माननीय एन0जी0टी0, नई दिल्ली में विचाराधीन Original Application No. 200/2014 M C Mehta (Applicant) Versus Union of India & Ors. (Respondent) में दिनांक–20.02.2024 को पारित आदेश की कंडिका "Tribunal by order dated 24.11.2023 had specified the heads and sub-heads under which the information is to be submitted by the District Magistrates of different Districts and the order dated 24.11.2023 was duly circulated to the Chief Secretaries of all the concerning five States from where the main stream of river Ganga flows, including Chief Secretary, State of Jharkhand. Thereafter, matter was listed on 2

05.12.2023 but no report by any of the concerned District Magistrate from State of Jharkhand was submitted.” का उल्लेख करते हुए बताया गया कि इस मामले में माननीय एन0जी0टी0 के बार-बार निदेश दिये जाने के बावजूद माननीय एन0जी0टी0 के आदेश दिनांक-24.11.2023 के आलोक प्रतिवेदन समर्पित नहीं करने के कारण माननीय एन0जी0टी0 द्वारा दिनांक-20.02.2024 को एक आदेश पारित किया गया है जिसमें उल्लेखित है कि :-

“11. Submission of Counsel for the applicant is that Tribunal should impose environmental compensation applying the Principle of ‘Polluter Pays’ and that the concerned District Magistrate should be prosecuted for not taking the requisite steps.

12. At this stage, we are taking a lenient view and imposing the token cost of Rs. 25,000/- which is to be deposited by State of Jharkhand before Registrar General of the NGT within one week and it will be open to the State to recover this amount from the defaulting District Magistrates and report it to the Tribunal. Subject to the above, **further four weeks time is granted to Counsel for State of Jharkhand to ensure compliance of the order of the Tribunal dated 05.12.2023** and that the reports are filed by the concerned District Magistrate and tabulated information of all the relevant Districts in a chart form is placed before the Tribunal at least one week before the next date of hearing by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

प्रभारी पदाधिकारी, विधि शाखा द्वारा उक्त बिन्दुओं को उल्लेखित करते हुए बैठक की आवश्यकता एवं महत्व को बताया गया। तत्पश्चात उपायुक्त, बोकारो द्वारा बताया गया कि माननीय द्वारा इस तरह आदेश पारित करना अत्यन्त ही गंभीर विषय है। उपायुक्त द्वारा केन्द्र सरकार की अधिसूचना दिनांक-20, सितम्बर, 2021 के आलोक में समिति के संयोजक सदस्य के रूप में वन प्रमण्डल पराधिकारी, बोकारो को नामित किया गया एवं उन्हें इस संबंध में स्थिति को स्पष्ट करने एवं विभागवार प्रतिवेदन तैयार करने हेतु प्लान प्रस्तुत करने को कहा गया, ताकि ससमय माननीय एन0जी0टी0 में प्रतिवेदन समर्पित किया जा सके।

वन प्रण्डल पदाधिकारी द्वारा माननीय एन0जी0टी0 के आदेश दिनांक-18.09.2023 पारित आदेश में उल्लेखित विभिन्न बिन्दुओं की एक-एक कर समीक्षा की गई। माननीय एन0जी0टी0 द्वारा जिन बिन्दुओं पर प्रतिवेदन उपलब्ध कराने का निदेश दिया गया है जो निम्नवत है : -

River	District	Issues	Concerned Department
Damodar (Origin- Palamau, Bihar)	Ramgarh Dhanbad Bokaro	<ul style="list-style-type: none"> Industrial towns- pollution from industrial effluents and hazardous waste. 	<ul style="list-style-type: none"> Bokaro Steel Plant Nagar Nigam, Chas/Phusro BIADA
		<ul style="list-style-type: none"> Some ETPs non- performance and bypass into drain. 	<ul style="list-style-type: none"> Bokaro Steel Plant Nagar Nigam, Chas/Phusro

			<ul style="list-style-type: none"> • BIADA
		<ul style="list-style-type: none"> • Mine water discharges 	<ul style="list-style-type: none"> • District Mining Office, Bokaro • CCL & BCCL
		<ul style="list-style-type: none"> • Fly ash from TPP (eg. Bokaro) 	<ul style="list-style-type: none"> • Bokaro Steel Plant • CTPS • BTPS • TTPS • Vedanta
		<ul style="list-style-type: none"> • Coal washeries- consumption of water and discharge of liquid effluents. 	<ul style="list-style-type: none"> • BCCL & CCL
		<ul style="list-style-type: none"> • Coke oven plants- produce tar oil, cyanide, ammonia and phenol. 	<ul style="list-style-type: none"> • Bokaro Steel Plant • Vedanta
		<ul style="list-style-type: none"> • The Bokaro steel and IISCO drain their effluents directly into the river Damodar. 	<ul style="list-style-type: none"> • Bokaro Steel Plant
		<ul style="list-style-type: none"> • Sindri (fertiliser and other chemical units) 	<ul style="list-style-type: none"> • Related to Dhanbad District
		<ul style="list-style-type: none"> • Sewage discharge (mixed drain/ kucha drain contamination) 	<ul style="list-style-type: none"> • Bokaro Steel Plant • Nagar Nigam, Chas/Phusro • BIADA
		<ul style="list-style-type: none"> • Municipal waste/ Biomedical waste/ Hazardous waste/ legacy waste disposal detailed status required as the three are major industrial town with dense population, health infrastructure and industries) 	<ul style="list-style-type: none"> • Bokaro Steel Plant • Nagar Nigam, Chas/Phusro • Civil Surgeon, Bokaro

River	Districts	Issues	Concerned Department
Tributaries of Damodar	Ramgarh Dhanbad Bokaro	<ul style="list-style-type: none"> • Groundwater in critical @ Ramgarh and Dhanbad 	
Sufi River			
Nalkari		<ul style="list-style-type: none"> • The main industrial units on this river are the BASL (steel) at Patratu and 	

		the Patratu Thermal Power Station (PTPS) that are polluting in nature	
Bhairavi			
Konar			
Jamunia			
Bokaro	It passes through the West Bokaro and East Bokaro coalfields. flows into the Konar River shortly before the latter flows into the Damodar River.	<ul style="list-style-type: none"> • Polluted with industrial as domestic effluents. 	<ul style="list-style-type: none"> • Executive Engineer, Drinking water and Sanitation Division, Chas/Tenughat • BTPS • TTPS • CCI & BCCL
Khadia		Nitrate pollution	
Haharo			
Ghari			
Barakar		Fluoride contamination	

INDUSTRIAL PROFILE OF DAMODAR RIVER BASIN

District	Industries	Status/Issues	Concerned Department
Bokaro	Bokaro Steel Plant, BS City	Discharges into	<ul style="list-style-type: none"> • Management of Plants • GMDIC • Factory Inspector
	BTPS Bokaro Thermal Power Plant	Ganga River (BSP)	
	Usha Martin Ltd TPP	EC imposed	
	Tenughat TPP		
	Chandrapura TPP		
	Bokaro Power Supply Co		
	TATA Steel TPP		
	Kathara TPP		
	SAIL		
	Elecot steel Ltd (Now Vedanta)		

KEY POLLUTION ISSUES

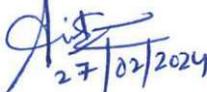
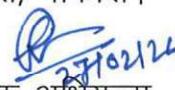
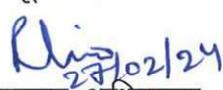
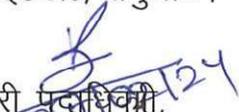
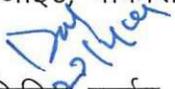
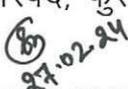
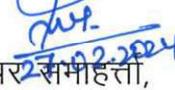
SL No	Issues	Concerned Departments who have to submit report
1	Illegal sand, clay and stone mining in the Ganga River and Damodar River Basins	DMO, Bokaro

2	Industrial pollution in Dhanbad, Bokaro, Sindri and Ramgarh	GMDIC, Factory Inspector
3	Sewage discharge from Sahibganj, Rajamahar, Dhanbad, Bokaro and other cities/ towns in the catchment are polluting the River Ganga and Damodar.	Nagar Nigam, Chas/Phushro
4	Floodplain encroachment	Additional Collector, Bokaro
5	River island encroachment (eg. Sahibganj)	Additional Collector, Bokaro
6	ETPs under or non- performance. Not all units have installed ETPs and STPs	Nagar Nigam, Chas/Phushro
7	Mine water discharge- Ministry of Environment and Forest (MoEF), Government of India (GoI) based on Comprehensive Environmental Pollution Index (CEPI) declared (January 2010) Dhanbad as a critically polluted area and identified four blocks of Dhanbad district viz. Dhanbad Sadar, Jharia, Govindpur and Nirsa as critically polluted. The predominant sources of pollutants in Dhanbad are Mines, Industries, Bio-medical waste as well as sewage and sullage of municipal areas and the townships of the aforesaid mines and industries.	DMO CCL & BCCL
8	Disposal of Fly ash from TPP (eg. Bokaro)	BSL BPSCCL BTPS TTPS CTPS Vedanta Factory Inspector
9	The over burden (OB) of mines, the rejects of coal washeries and ash of Thermal Power Plants are kept either on the river bed or near the river, which sooner or later go to the river. Further, the 11 sewage of towns, townships and suburbs finds way to downstream through septic tanks and soak pits.	BSL BTPS TTPS CTPS Vedanta Factory Inspector DMO
10	Coal washeries- consumption of fresh water and discharge of liquid effluents.	CCL & BCCL
11	Coke oven plants- produce tar oil, cyanide, ammonia and phenol.	BSL Vedanta
12	The Bokaro steel and IISCO drain and other industries polluting river Damodar.	BSL
13	Municipal waste/ Biomedical waste/ Hazardous waste disposal and related pollution	Nagar Nigam, Chas Nagar Parishad, Phushro Civil Surgeon, Bokaro

14	Groundwater is critical @ Ramgarh and Dhanbad (over exploited)	Executive Engineer, Miner Irrigation, Bokaro
15	Diseases- As per the CAG Audit Report on General, Social and Economic (Non-PSUs) Sectors, 31 March 2014- NPCDCS was launched (2010-11) by Ministry of Health and Family Welfare (MH&FW), Gol, in 100 districts of 21 States which included three districts (Bokaro, Dhanbad and Ranchi) of Jharkhand for reducing the burden of Non-Communicable Diseases (NCDs) such as cancer, diabetes, cardiovascular diseases and stroke.	Civil Surgeon, Bokaro

उपायुक्त, बोकारो द्वारा बैठक में उक्त सभी बिन्दुओं पर विस्तृत समीक्षोपरान्त संबंधित विभाग के नाम के सामने अंकित विषयों पर एक सप्ताह के अन्दर प्रतिवेदन समर्पित करने का निदेश दिया गया। साथ ही उक्त सभी बिन्दुओं की निगरानी एवं समीक्षोपरान्त समेकित प्रतिवेदन तैयार करने हेतु वन प्रमण्डल पदाधिकारी, बोकारो एवं क्षेत्रीय पदाधिकारी, झारखण्ड प्रदुषण नियंत्रण परिषद, धनबाद को निदेश दिया गया। उपायुक्त द्वारा यह भी निदेश दिया गया कि इस मामले की व्यापकता/गंभीरता को देखते हुए आगामी बैठक में ऐसे महत्वपूर्ण विभाग जो आज की बैठक में शामिल नहीं हैं, को शामिल किया जाय। एक सप्ताह के पश्चात पुनः समिति की बैठक आयोजित करने का निदेश प्रभारी पदाधिकारी, विधि शाखा को दिया गया।

धन्यवाद ज्ञापन के साथ बैठक की कार्यवाही समाप्त की गई।

जिला जनसम्पर्क पदाधिकारी, बोकारो।	 27/02/2024 कार्यपालक अभियन्ता, पी0डब्लू0डी0, बोकारो।	 27.2.24 कार्यपालक अभियन्ता, आर0डब्लू0डी0, बोकारो
 27/02/24 कार्यपालक अभियन्ता, पी0एच0ई0डी0, बोकारो।	 27/02/24 कार्यपालक अभियन्ता, पी0एच0ई0डी0, तेनुघाट।	 27/02/24 कार्यपालक अभियन्ता, एम0आई0, बोकारो।
कार्यपालक पदाधिकारी, नगर परिषद, फुसरो।	 27/02/24 प्रभारी पदाधिकारी, विधि शाखा, बोकारो।	 27/02/24 सिविल सर्जन, बोकारो।
 27.02.24 अपर नगर आयुक्त, चास।	 27/02/2024 अपर समीहती, बोकारो	क्षेत्रीय पदाधिकारी, JSPCB, धनबाद।
 27/2/24 उप विकास आयुक्त, बोकारो।	 27/2/2024 वन प्रमण्डल पदाधिकारी, बोकारो।	 27/2/24 उपायुक्त, बोकारो।

ज्ञापांक-.....290...../विधि, दिनांक-.....27/02...../2024

- प्रतिलिपि :- कारखाना निरीक्षक, बोकारो/महाप्रबंधक, उद्योग केन्द्र, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- जिला जन सम्पर्क पदाधिकारी, बोकारो/कार्यपालक अभियन्ता, पी0डब्लू0डी0, बोकारो/ कार्यपालक अभियन्ता, आर0डब्लू0डी0, बोकारो/ कार्यपालक अभियन्ता, पी0एच0ई0डी0, बोकारो/तेनुघाट/ कार्यपालक अभियन्ता, बांध प्रमण्डल, तेनुघाट को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- सी0ई0ओ0, बोकारो स्टील प्लांट/सी0ई0ओ0, वेदान्ता/मुख्य अभियन्ता, बी0टी0पी0एस0 / सी0टी0पी0एस0 / टी0टी0पी0एस0 /महाप्रबंधक, सी0सी0एल0, बोकारो/महाप्रबंधक, बी0सी0सी0एल0, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- कार्यपालक पदाधिकारी, नगर परिषद्, फुसरो/अपर समाहर्ता, बोकारो/अपर नगर आयुक्त, चास/सचिव, बियाड, बोकारो /उप विकास आयुक्त, बोकारो को सूचनार्थ एवं अवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, धनबाद/वन प्रमण्डल पदाधिकारी, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- सचिव, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, राँची को सूचनार्थ प्रेषित।
- प्रतिलिपि :- सरकार के सचिव, वन पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड सरकार, राँची को सूचनार्थ प्रेषित।


उपायुक्त,
बोकारो।

उपायुक्त –सह– जिला दण्डाधिकारी का कार्यालय, बोकारो (विधि शाखा)

दिनांक-09.03.2024 को उपायुक्त, बोकारो के निदेशानुसार वन प्रमण्डल पदाधिकारी, बोकारो द्वारा विभिन्न विभागों/प्रतिष्ठानों से प्राप्त प्रतिवेदनों की समीक्षा बैठक की कार्यवाही :-

उपस्थिति :- पंजी के अनुसार।

माननीय एन0जी0टी0, नई दिल्ली में विचाराधीन Original Application No. 200/2014 M C Mehta (Applicant) Versus Union of India & Ors. (Respondent) में दिनांक-20.02.2024 को पारित आदेश के आलोक में दिनांक-24.02.2024 को आयोजित बैठक में दिये गये निदेशों के अनुपालन में विभिन्न कार्यालयों एवं प्रतिष्ठानों से प्राप्त प्रतिवेदन की समीक्षा की गई। बैठक में बोकारो जिले के विभिन्न प्रतिष्ठानों एवं संबंधित कार्यालयों के पदाधिकारी/प्रतिनिधि उपस्थित हुए।

बैठक की कार्यवाही :-

सर्वप्रथम वन प्रमण्डल पदाधिकारी, बोकारो संयोजक सदस्य, जिला गंगा समिति द्वारा समिति के सदस्यों एवं विभिन्न प्रतिष्ठानों के उपस्थित सदस्यों/प्रतिनिधियों का स्वागत किया गया। तदोपरान्त माननीय एन0जी0टी0 आदेश में उल्लेखित बिन्दुओं के अनुपालन के लिए उत्तरदायी प्रतिष्ठानों एवं कार्यालयों से प्राप्त प्रतिवेदनों पर विस्तृत समीक्षा की गई।

1. Industrial towns- pollution from industrial effluents and hazardous waste /Some ETPs non performance and bypass drain :-

इस बिन्दु पर बी0एस0एल0, चास नगर निगम, फुसरो नगर परिसर एवं बियाडा को प्रतिवेदन समर्पित करना था। सर्वप्रथम बी0एस0एल0 के प्रतिनिधि द्वारा बताया गया कि उनके द्वारा प्रतिवेदन समर्पित कर दिया गया है। उनके द्वारा यह भी बताया गया कि बी0एस0एल0 प्लान्ट, द्वारा दो Treatment Plant लगाये गये हैं। प्लॉन्ट से निकलने वाले प्रदुषित जल को Treatment Plant में शोधन के पश्चात ही नदी में बहाया जाता है।

फुसरो नगर परिसर द्वारा बताया गया कि उनके यहाँ दो Treatment Plant निर्माणाधीन हैं। बियाडा द्वारा बताया गया कि उनके यहाँ से ऐसे किसी भी प्रकार प्रदुषित जल का निस्तारण दामोदर नदी में नहीं किया जाता है।

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2. Mine water discharge :-

इस बिन्दु पर जिला खनन पदाधिकारी, सी०सी०एल० एवं बी०सी०सी०एल द्वारा प्रतिवेदन समर्पित किया जाना है। जिला खनन पदाधिकारी द्वारा बताया गया कि बोकारो जिले में तीन कोयले के खान हैं, वन प्रण्डल पदाधिकारी द्वारा उन्हें निदेश दिया गया कि आप Mine Water से होने वाले प्रदूषण के बारे में एक प्रतिवेदन अविलम्ब समर्पित करें। सी०सी०एल० एवं बी०सी०सी०एल द्वारा बताया गया कि उनके द्वारा प्रतिवेदन समर्पित कर दिया गया है। उनके द्वारा यह भी बताया गया कि Mine Water से कोई प्रदूषण नहीं होता है। वन प्रण्डल पदाधिकारी द्वारा निदेश दिया गया कि आप सभी इस बाबत शपथपत्र अवश्य दे दें कि संबंधित प्रतिष्ठान द्वारा Mine Water से कोई प्रदूषण नहीं होता है।

3. Fly ash from TPP(eg. Bokaro) :-

इस बिन्दु पर बी०एस०एल०, सी०टी०पी०एस०, बी०टी०पी०एस०, टी०टी०पी०एस०, वेदान्ता को प्रतिवेदन समर्पित करना है। बी०एस०एल० के प्रतिनिधि द्वारा बताया गया कि बी०एस०एल० विद्युत उत्पादन का कार्य नहीं करता है। उनके प्रतिष्ठान के लिए विद्युत उत्पादन का कार्य बी०पी०एस०सी०एल० द्वारा किया जाता है। इसपर वन प्रण्डल पदाधिकारी द्वारा उपस्थित बी०पी०एस०सी०एल० के प्रतिनिधि से इस संबंध में पृच्छा की गई। बी०पी०एस०सी०एल० के प्रतिनिधि द्वारा इस माध्यम से कोई प्रदूषण नहीं होने की बात कही गई। वन प्रण्डल पदाधिकारी द्वारा उनसे इस बाबत शपथपत्र समर्पित करने को कहा गया।

वन प्रण्डल पदाधिकारी द्वारा बताया गया कि विभिन्न प्रतिष्ठानों से उनके द्वारा प्रदूषण नहीं किये जाने का प्रमाण पत्र समर्पित करने की बात कही जा रही है, लेकिन इसका सत्यापन झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद द्वारा अवश्य किया जाना चाहिए। इसपर जे०एस०पी०सी०बी० के पदाधिकारी द्वारा बताया गया कि उनके स्तर से भी विभिन्न प्रतिष्ठानों से प्रतिवेदन की मांग की गई है। जैसी ही प्रतिवेदन प्राप्त होते हैं उनके सत्यापन की कार्रवाई करते हुए प्रतिवेदन समर्पित कर दिया जाएगा। उनके द्वारा यह भी बताया गया कि विभिन्न प्रतिष्ठानों के द्वारा दिये गये प्रमाण पत्रों की जाँच एवं समीक्षोपरान्त उनके सत्यापन की कार्रवाई की जाएगी।

सी०टी०पी०एस०, चन्द्रपुरा द्वारा बताया गया कि उनके द्वारा Fly ash द्वारा कोई प्रदूषण नहीं होता है। इस आसय का वे प्रमाण पत्र समर्पित कर देंगे। टी०टी०पी०एस० के प्रतिनिधि द्वारा बताया गया कि उनके प्रतिष्ठान में Silo System अधिष्ठापित है। जिसके माध्यम से 80 प्रतिशत तक fly ash ई०एस०पी० के माध्यम से निष्कासित कर ट्रान्सपोर्ट के माध्यम से व्यवसायिक प्रयोग

हेतु संबंधित ऐजेन्सी को दे दिया जाता है। ऐसी दो ऐजेन्सियों को work order दिया गया। अन्य कई कम्पनियों ने भी इस संबंध में सम्पर्क स्थापित किया है। इस तकनिक से 80 प्रतिशत तक के Fly ash को ash pond में भेजने से रोका जा सका है। उनके द्वारा यह भी बताया गया कि प्रदूषण के मामले में माननीय एन0जी0टी0 निर्धारित दिशा निर्देशों को पुरी तरह पालन किया जाता है।

वेदान्ता के प्रतिनिधि द्वारा बताया गया कि उनके प्रतिष्ठान द्वारा fly ash का निस्तारण बाहर नहीं किया जाता है। बजाये इसके fly ash को सिमेंट एवं ईट की फैक्ट्रियों को बेच दिया जाता है। वेदान्ता के प्रतिनिधि द्वारा यह भी बताया गया कि इस आसय का प्रमाण पत्र उपलब्ध करा दिया जाएगा।

4. Coal washeries consumption of water and discharge of liquid effluents :-

इस बिन्दु पर बी0सी0सी0एल0 एवं सी0सी0एल0 को प्रतिवेदन समर्पित करना है। सी0सी0एल0/बी0सी0सी0एल0 के प्रतिनिधियों द्वारा बताया गया कि दुग्दा, कथारा, स्वांग एवं करगली से संबंधित प्रतिवेदन समर्पित किया गया है। उनके द्वारा बताया गया कि कोई भी Coal washeries वर्तमान में संचालित नहीं है। वन प्रमण्डल पदाधिकारी द्वारा निदेश दिया गया कि बी0सी0सी0एल0 एवं सी0सी0एल0 मूल बिन्दुओं पर अपने मन्तव्य के साथ प्रतिनिदेन को Crux में उपलब्ध करायें ताकि माननीय एन0जी0टी0 को समर्पित किये जाने वाले प्रतिवेदन में मुख्य-मुख्य बातें शामिल की जा सकें।

5. Coke oven plants produce tar oil, cyanide, ammonia and phenol :-

इस बिन्दु पर बी0एस0एल0 एवं वेदान्ता को प्रतिवेदन समर्पित करना है। वन प्रमण्डल पदाधिकारी द्वारा इसकी समुचित समीक्षा की गई। बी0एस0एल0 के प्रतिनिधि द्वारा बताया गया कि उनके द्वारा प्रतिवेदन समर्पित कर दिया गया है। वन प्रमण्डल पदाधिकारी द्वारा बी0एस0एल0 के प्रतिनिधि को अपने प्रतिवेदन को Crux में तैयार कर समर्पित करने का निदेश दिया गया। इस मामले में वेदान्ता के प्रतिनिधि से पृच्छा की गई कि क्या ये हानिकारक तत्व उत्पन्न होते हैं कि नहीं यदि होते हैं तो क्या निर्धारित सीमा के अन्दर हैं कि नहीं इस आसय का प्रमाण पत्र समर्पित किया जाय। जिसपर वेदान्ता के प्रतिनिधि द्वारा बताया गया कि इस आसय का प्रमाण पत्र समर्पित कर दिया जाएगा।

6. The Bokaro Steel and IISCO drain their effluents directly into the river Damodar :-

इस बिन्दु पर बी0एस0एल0 को प्रतिवेदन समर्पित करना है। IISCO का कोई प्रतिष्ठान बोकारो में नहीं है। बी0एस0एल0 के प्रतिनिधि द्वारा बताया गया कि बी0एस0एल0 से बिना

Treatment Plant के माध्यम से शोधन किये हुए कोई भी प्रदूषित जल का निष्कारण दामोदर में नहीं किया जाता है।

7. Sindri (fertiliser and other chemical units):-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि यह मामला धनबाद जिले से संबंधित है।

8. Sewage discharge (mixed drain/ kucha drain contamination):-

इस बिन्दु पर बी0एस0एल0, चास नगर निगम, फुसरो नगर परिषद एवं बियाडा को प्रतिवेदन समर्पित करना है। वन प्रमण्डल पदाधिकारी द्वारा इस संबंध में संबंधित प्रतिष्ठानों के प्रतिनिधियों से प्रतिवेदन के संबंध में स्थिति स्पष्ट करने को कहा गया। बी0एस0एल0 के प्रतिनिधि द्वारा बताया गया कि Sewage discharge के लिए बी0एस0एल0 द्वारा तीन Treatment Pond निर्मित हैं एक सेक्टर-11, सेक्टर-12 एवं धनडबरा में। उनके द्वारा यह भी बताया गया कि बिना शोधन के कोई दूषित जल का नदी में निस्तारण नहीं किया जाता है। फुसरो नगर परिषद के पदाधिकारी द्वारा बताया गया कि उनके यहाँ दो Teatment Plant निर्माणाधीन हैं। वन प्रमण्डल पदाधिकारी द्वारा निदेश दिया गया कि इससे संबंधित एक प्रतिवेदन अवश्य उपलब्ध करा दें। बियाडा के पदाधिकारी द्वारा बताया गया कि उनके यहाँ से कोई भी Sewage discharge दामोदर नदी में नहीं किया जाता है।

9. Municipal waste/ Biomedical waste/ Hazardous waste/ legacy waste disposal detailed status required as the three are major industrial town with dense population, health infrastructure and industries) :-

इस बिन्दु पर बी0एस0एल0, चास नगर निगम, फुसरो नगर परिषद एवं सिविल सर्जन, बोकारो को प्रतिवेदन समर्पित करना है। बी0एस0एल0 के प्रतिनिधि द्वारा बताया गया कि शहरी कचड़े के निस्तारण की बड़े पैमाने पर व्यवस्था की गई है साथ ही शहर के कचड़े का इस्तेमाल कर बायो गैस निर्मित करने का प्रस्ताव तैयार कर लिया गया है एवं वर्तमान में टेंडर की प्रक्रिया की जा रही है।

नगर परिषद फुसरो के पदाधिकारी द्वारा बताया गया कि कचड़ों के निस्तारण हेतु प्लांट अभी निर्माणाधीन हैं। इसपर वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि अपना प्रतिवेदन स्पष्ट रूप में समर्पित करें।





सिविल सर्जन, बोकारो द्वारा बताया गया कि Biomedical waste के निस्तारण की समुचित व्यवस्था है। ऐसे अपशिष्टों के निस्तारण हेतु एक एजेन्सी कार्यरत है जिसके माध्यम से Biomedical waste का निस्तारण किया जाता है।

वन प्रमण्डल पदाधिकारी द्वारा सभी को निदेश दिया गया कि इस विषय से संबंधित आपके जो भी प्रतिवेदन हैं उसके अनुलग्नक (Annexure), निर्धारित Formate में Crux के रूप में उपलब्ध करायें ताकि प्रतिवेदनों के संकलन में सुविधा हो सके।

- **(It passes through the West Bokaro and East Bokaro coalfields. flows into the Konar River shortly before the latter flows into the Damodar River) दामोदर नदी की सहयोगी निदियों के संबंध में :-**

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि बोकारो जिले से दामोदर की सहयोगी नदी बोकारो नदी है। बोकारो नदी में औद्योगिक एवं घरेलु कुड़ा करकट से प्रदूषण के संबंध में कार्यपालक अभियन्ता, पेय जल एवं स्वच्छता विभाग, चास/तेनुघाट, बी०टी०पी०एस०, टी०टी०पी०एस०, सी०सी०एल० एवं बी०सी०सी०एल० को प्रतिवेदन उपलब्ध कराना है। इसपर कार्यपालक अभियन्ता, पेय जल एवं स्वच्छता विभाग ने बताया किया इससे संबंधित प्रतिवेदन समर्पित कर दिया गया है। वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि आप अपना प्रतिवेदन के मूल एवं मुख्य बिन्दुओं को Crux के रूप में समर्पित करें ताकि प्रतिवेदन का संकलन किया जा सके। बी०टी०पी०एस०, टी०टी०पी०एस०, सी०सी०एल० एवं बी०सी०सी०एल० द्वारा अभी कोई प्रतिवेदन समर्पित नहीं किया गया है। वन प्रमण्डल पदाधिकारी द्वारा सभी प्रतिष्ठानों के प्रतिनिधियों को निदेश दिया गया कि आज शाम तक निश्चित रूप से अपना प्रतिवेदन समर्पित करें।

- **Key Pollution Issues :-**

वन प्रमण्डल पदाधिकारी, बोकारो द्वारा इस बिन्दु की विस्तृत समीक्षा की गई। उनके द्वारा बताया गया कि प्रदूषण के मुख्य बिन्दुओं के संबंध में माननीय एन०जी०टी० द्वारा अपने आदेश में उल्लेख किया गया। कुल 15 बिन्दुओं पर विभिन्न विभागों एवं प्रतिष्ठानों द्वारा प्रतिवेदन उपलब्ध कराया जाना है। वन प्रमण्डल पदाधिकारी द्वारा बिन्दुवार प्राप्त अथवा अप्राप्त प्रतिवेदनों की समीक्षा की गई :-

1. Illegal sand, clay and stone mining in the Ganga River and Damodar River

Basin :-

वन प्रमण्डल पदाधिकारी, बोकारो द्वारा इस बिन्दु पर प्रतिवेदन हेतु जिला खनन पदाधिकारी को प्रतिवेदन समर्पित करने का निदेश दिया गया। उनके द्वारा जिला खनन पदाधिकारी को निदेशित करते हुए कहा गया कि आपका जो भी प्रतिवेदन है वह स्पष्ट होना चाहिए।

2. Industrial pollution in Dhanbad, Bokaro, Sindri and Ramgarh :-

इस बिन्दु पर महाप्रबंधक, उद्योग केन्द्र, बोकारो एवं कारखाना निरीक्षक, बोकारो को प्रतिवेदन समर्पित करना है। महाप्रबंधक, उद्योग केन्द्र द्वारा बताया गया कि वे बोकारो जिले के उद्योगों की सूची उपलब्ध करा सकते हैं। प्रदूषण संबंधी जाँच कारखाना निरीक्षक के क्षेत्राधिकार में है। कारखाना निरीक्षक, बोकारो द्वारा बताया गया कि कुल 9 प्रतिष्ठानों को प्रतिवेदन समर्पित करने हेतु पत्र दिया गया है। कारखाना निरीक्षक द्वारा यह भी बताया गया कि जो भी प्रतिष्ठान हैं उनके द्वारा अधिष्ठापित Treatment Plant एवं उपकरण सही तरीके से काम कर रहे हैं कि नहीं इनकी भी जाँच की जानी है। उनके द्वारा बताया गया कि जाँच एवं संबंधित प्रतिष्ठानों से प्रतिवेदन प्राप्त होने के उपरान्त वे प्रतिवेदन समर्पित कर देंगे। साथ ही इस विषय पर झारखण्ड राज्य प्रदूषण नियंत्रण परिषद् को भी प्रतिवेदन देना चाहिए जो अभी तक उपलब्ध नहीं कराया गया है। वन प्रमण्डल पदाधिकारी द्वारा निदेशित किया गया कि प्रतिवेदन का प्रपत्र (format) तैयार कर लें एवं तत्पश्चात उसमें आंकड़ों को भरें। उनके द्वारा यह भी निदेश दिया गया कि विषयों को उद्योगवार अथवा क्षेत्रवार बाट लेने के बाद उसी के अनुसार प्रतिवेदन तैयार करें।

3. Sewage Discharge from Cities and Towns polluting the river

Ganga/Damodar :-

इस बिन्दु पर चास नगर निगम एवं नगर परिषद, फुसरो को प्रतिवेदन समर्पित करना है। वन प्रमण्डल पदाधिकारी द्वारा चास नगर निगम एवं फुसरो नगर परिषद को प्रतिवेदन समर्पित करने का निदेश दिया गया।

4. Floodplain Encroachment :-

इस बिन्दु पर अपर समाहर्ता, बोकारो द्वारा प्रतिवेदन दिया जाना है जो अभी अप्राप्त है। वन प्रमण्डल पदाधिकारी द्वारा अपर समाहर्ता से विमर्श के उपरान्त बताया गया कि मामले में प्रतिवेदन अविलम्ब समर्पित कर दें।

5. River island encroachment (eg. Sahebganj) :-

इस बिन्दु पर बताया गया कि रिवर आईलैंड के अतिक्रमण के मामले साहेबगंज जिले में हैं यदि बोकारो में वैसे मामले हैं तो तत्संबंधी प्रतिवेदन अपर समाहर्ता, बोकारो उपलब्ध करायेगें।

6. ETPs under or non-performance. Not all units have installed ETPs and STPs

:- इस बिन्दु पर नगर निगम, चास एवं नगर परिषद, फुसरो द्वारा पूर्व में अपने प्रतिवेदन के संबंध में बताया जा चुका है। शीघ्र ही प्रतिवेदन समर्पित करने की बात कही गई।

7. Mine Water Discharge :-

इस बिन्दु पर जिला खनन पदाधिकारी, सी०सी०एल० एवं बी०सी०सी०एल० के द्वारा प्रतिवेदन समर्पित किये जाने के संबंध में वन प्रमण्डल पदाधिकारी द्वारा निदेश दिया गया।

8. Disposal of Fly ash from TPP (eg. Bokaro) :-

इस संबंध में विभिन्न प्रतिष्ठान BSL, BPSCL, BTPS, TTPS, CTPS, Vedanta, Factory Inspector के प्रतिनिधियों से प्रतिवेदन समर्पित करने को कहा गया। वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि इस सभी प्रतिवेदनों को संकलित कर विस्तृत प्रतिवेदन तैयार किया जाना है। इसके लिए आवश्यक है कि संबंधित प्रतिष्ठान एवं कार्यालय अपना डाटा ससमय उपलब्ध करा दें ताकि प्रतिवेदन तैयार किया जा सके। बी०पी०एस०सी०एल० के प्रतिनिधि द्वारा बताया गया कि उनके द्वारा प्रतिवेदन समर्पित कर दिया गया है। उनके प्रतिवेदन के बिन्दु – “सी” में उनके द्वारा स्पष्ट रूप से उल्लेख किया गया है कि उनका प्रतिष्ठान नदी से 5 किमी की दुरी पर अवस्थित है एवं उनके प्रतिष्ठान से निकलनेवाले fly ash को एन०एच०ए०आई० की परियोजनाओं में प्रयुक्त किया जाता है। साथ ही सिमेन्ट उद्योग में भी इसका इस्तेमाल किया जाता है। उनके द्वारा यह भी बताया गया कि प्रतिष्ठान द्वारा ash Pond के आस पास के क्षेत्रों के भू-जल की जाँच प्रत्येक तीमाही में की जाती है। ताकी जो भी मानदण्ड निर्धारित हैं उसकी सीमा को नियंत्रित किया जा सके। वन

प्रमण्डल पदाधिकारी द्वारा इस संबंध में प्रतिवेदन हेतु अन्य प्रतिष्ठानों को भी प्रतिवेदन समर्पित करने को कहा गया।

9. The over burden (OB) of mines.....:-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि इस विषय पर BSL, BPSCL, BTPS, TTPS, CTPS, Vedanta, Factory Inspector, DMO आदि प्रतिवेदन आना था। जिसमें से कुछ प्रतिष्ठानों द्वारा प्रतिवेदन समर्पित नहीं किया गया है। वन प्रमण्डल पदाधिकारी द्वारा बी०टी०पी०ए, टी०टी०पी०एस० एवं सी०टी०पी०एस० से प्रतिवेदन के साथ – साथ प्रमाण पत्र भी देने को कहा गया एवं वन प्रमण्डल पदाधिकारी द्वारा संबंधित प्रतिष्ठानों के प्रतिनिधियों को अपने प्रतिवेदन को संक्षिप्त करने का निदेश देते हुए कहा गया कि प्रतिवेदन को इस तरह से तैयार किया जाय ताकि सभी महत्वपूर्ण तथ्य आ जायें एवं जिनके संकलन में सुविधा हो सके। वन प्रमण्डल पदाधिकारी द्वारा वेदान्ता के प्रतिनिधि को शाम तक प्रतिवेदन उपलब्ध कराने का निदेश दिया गया एवं साथ ही कारखाना निरीक्षक एवं जिला खनन पदाधिकारी को भी स्पष्ट प्रतिवेदन उपलब्ध कराने का निदेश दिया गया।

10. Coal washeries – consumption of fresh water and discharge of liquid effluents :-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि इस मामले में प्रतिवेदन अभी प्रतिक्षित है। उनके द्वारा सी०सी०एल० एवं बी०सी०सी०एल० के प्रतिनिधियों को निदेशित किया गया कि कोल वाशरियों द्वारा उपयोग किये जाने वाले स्वच्छ जल के उपयोग होने के उपरान्त प्रदूषित जल का दोबारा इस्तेमाल कैसे किया जाता है, इस संबंध में प्रतिवेदन समर्पित करें।

11. Coke oven plants – produce tar oil, cyanide, ammonia and phenol :-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि बी०एस०एल० से प्रतिवेदन अभी प्रतिक्षित हैं, उनके द्वारा बी०एस०एस० के प्रतिनिधि को निदेशित करते हुए बताया गया कि आप का जो भी जवाब उसे मात्रात्मक (Quantify) रूप से उल्लेख होना चाहिए। वेदान्ता के प्रतिनिधि द्वारा बताया गया कि उनके प्रतिष्ठान से इन विषैले तत्वों को उत्पादन नहीं होता है। वन प्रमण्डल पदाधिकारी द्वारा इस संबंध में कारखाना निरीक्षक से अपना पक्ष रखने को कहा गया। कारखाना निरीक्षक द्वारा बताया गया कि कुल- 7

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बिन्दुओं पर प्रतिवेदन की मांग की गई है। जैसे ही संबंधित प्रतिष्ठानों में प्रतिवेदन प्राप्त होते हैं वे समर्पित कर देंगे। वन प्रमण्डल पदाधिकारी द्वारा इस संबंध में झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, धनबाद के पदाधिकारी को भी प्रतिवेदन समर्पित करने को कहा गया।

12.The Bokaro Steel and IISCO drain and other industries polluting river Damodar :-

इस विषय पर बी०एस०एल० के प्रतिनिधि द्वारा बताया गया कि अपने प्रतिवेदन में उल्लेखित बिन्दुओं को दोहराते हुए बताया गया कि प्रतिष्ठान द्वारा बिना शोधन के प्रदूषित जल का निस्तारण दामोदर नदी में नहीं किया जाता है। वन प्रमण्डल पदाधिकारी द्वारा उन्हें इस आसय का प्रमाण पत्र उपलब्ध कराने का निदेश दिया गया।

13.Municipal waste/Biomedical waste/Haardus waste disposal and related pollution :-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि इस विषय की पूर्व में ही इस बैठक में चर्चा हो चुकी तत्संबंधी प्रतिवेदन उपलब्ध करा दिया जाय।

14.Groundwater is critical @ Ramgarh and Dhanbad (over exploited) :-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि हालांकि यह विषय धनबाद एवं रामगढ़ जिले को लेकर है। लेकिन इस संबंध में कार्यपालक अभियन्ता, पेय जल एवं स्वच्छता विभाग एवं लघु सिंचाई से वांछित प्रतिवेदन उपलब्ध कराने को कहा गया। कार्यपालक अभियन्ता द्वारा बताया गया कि इन मामलों की देख रेख एवं अनुश्रवण हेतु पूर्व से भू-गर्भ जल सर्वेक्षण प्रमण्डल, हजारीबाग में संचालित है। वन प्रमण्डल पदाधिकारी द्वारा उपस्थित कार्यपालक अभियन्ता, पी०एच०ई०डी० को उक्त कार्यालय से सम्पर्क स्थापित कर प्रतिवेदन प्राप्त करने को कहा गया।

15. Diseases- As per the CAG Audit Report on General, Social and Economic (Non-PSUs) Sectors, 31 March 2014- NPCDCS was launched (2010-11) by Ministry of Health and Family Welfare (MH&FW), Gol, in 100 districts of 21 States which included three districts (Bokaro, Dhanbad and Ranchi) of Jharkhand for reducing the burden of Non-Communicable Diseases (NCDs) such as cancer, diabetes, cardiovascular diseases and stroke :-

वन प्रमण्डल पदाधिकारी द्वारा बताया गया कि यह विषय सिविल सर्जन, बोकारो से संबंधित है अतः सिविल सर्जन बोकारो इससे संबंधित वांछित प्रतिवेदन अविलम्ब उपलब्ध करायें।

माननीय एन0जी0टी0 द्वारा वांछित सभी बिन्दुओं पर विस्तार से चर्चा एवं समीक्षा के उपरान्त वन प्रमण्डल पदाधिकारी द्वारा समिति के उपस्थित सदस्यों एवं विभिन्न प्रतिष्ठानों के प्रतिनिधियों को निदेश दिया गया कि समय की बाध्यता को ध्यान में रखते हुए प्रमाण पत्र एवं स्पष्ट प्रतिवेदन के साथ –साथ वर्ड फाईल में भी ईमेल के माध्यम से भी उपलब्ध करायें ताकि ससमय संकलित प्रतिवेदन तैयार किया जा सके।

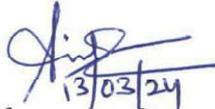
धन्यवाद ज्ञापन के साथ बैठक की कार्यवाही समाप्त की गई।

नोडल पदाधिकारी,
नमामि गंगे, बोकारो।


कार्यपालक अभियन्ता,
पी0एच0ई0डी0, बोकारो (आर)

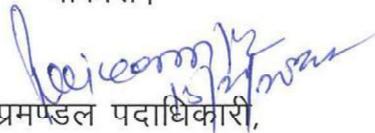
कार्यपालक पदाधिकारी,
नगर परिषद, फुसरो।

क्षेत्रीय पदाधिकारी,
JSPCB, धनबाद।


13/03/24
कार्यपालक अभियन्ता,
पी0डब्लू0डी0, बोकारो।

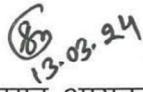
कार्यपालक अभियन्ता,
पी0एच0ई0डी0, तेनुघाट।


13/03/24
सिविल सर्जन,
बोकारो।


वन प्रमण्डल पदाधिकारी,
बोकारो।


13-3-24
कार्यपालक अभियन्ता,
आर0डब्लू0डी0, बोकारो।


13/03/24
कार्यपालक अभियन्ता,
एम0आई0, बोकारो।


13-03-24
अपर नगर आयुक्त,
चास।


उपायुक्त,
बोकारो।

ज्ञापांक-395/विधि, दिनांक-14/03/2024

- प्रतिलिपि :- कारखाना निरीक्षक, बोकारो/महाप्रबंधक, उद्योग केन्द्र, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- जिला जन सम्पर्क पदाधिकारी, बोकारो/कार्यपालक अभियन्ता, पी0डब्लू0डी0, बोकारो/ कार्यपालक अभियन्ता, आर0डब्लू0डी0, बोकारो/ कार्यपालक अभियन्ता, पी0एच0ई0डी0, बोकारो/तेनुघाट/ कार्यपालक अभियन्ता, बांध प्रमण्डल, तेनुघाट/कार्यपालक अभियन्ता, भू-गर्भ जल सर्वेक्षण प्रमण्डल, हजारीबाग को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- सी0ई0ओ0, बोकारो स्टील प्लांट/सी0ई0ओ0, वेदान्ता/मुख्य अभियन्ता, बी0टी0पी0एस0 / सी0टी0पी0एस0 / टी0टी0पी0एस0 / महाप्रबंधक, सी0सी0एल0, बोकारो/महाप्रबंधक, बी0सी0सी0एल0, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- उप विकास आयुक्त, बोकारो/अपर समाहर्ता, बोकारो/अपर नगर आयुक्त, चास/सचिव, बियाडा, बोकारो कार्यपालक पदाधिकारी, नगर परिषद्, फुसरो/नोडल पदाधिकारी, नमामि गंगे, बोकारो को सूचनार्थ एवं अवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, धनबाद/वन प्रमण्डल पदाधिकारी, बोकारो को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।
- प्रतिलिपि :- सचिव, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, राँची को सूचनार्थ प्रेषित।
- प्रतिलिपि :- सरकार के सचिव, वन पर्यावरण एवं जलवायु परिवर्तन विभाग, झारखण्ड सरकार, राँची को सूचनार्थ प्रेषित।

प्रभारी पदाधिकारी,
विधि शाखा, बोकारो।

अपर समाहर्ता,
बोकारो।

उपायुक्त,
बोकारो।

13.03.24
13.03.24

33000

ANNEXURE - II

स्टील अथॉरिटी ऑफ इण्डिया लि०
बेकारो स्टील प्लान्ट
इस्पात भवन
बेकारो स्टील सिटी- 827 001
जिला : बेकारो (झारखण्ड)
फैक्स संख्या : 06542 242099
दूरभाष संख्या 06542 246605



STEEL AUTHORITY OF INDIA LTD.
BOKARO STEEL PLANT
ISPAT BHAWAN
BOKAROSTEELCITY - 827001
DISTRICT - BOKARO (JHARKHAND)
Ph. No. 06542 246605 Fax No. 242099
E-mail : bsl.environment@sail.in

REF NO.इसीस / इएमएस / 50 / 2024- 103

DATE 09/03/2024

To,

Regional Officer
Jharkhand State Pollution Control Board
HIG-I, Housing Colony, Dhanbad-826001
Jharkhand

Sub: जिला गंगा समिति की दिनांक: 24.02.2024 को सम्पन्न बैठक में दिए गए निर्देश के आलोक के अद्यतन प्रतिवेदन उपलब्ध कराने के सम्बन्ध में।

Ref :- Letter No 452 received at BSL on 01/03/24
Letter No 360/Law from DC Office Bokaro dated 07/03/24

Dear Sir,

With reference to above mentioned letter, please find attached point wise status of compliance and point wise replies from SAIL/Bokaro Steel Plant:-

Sl.	Issue raised	Status of Compliance/Our submission.
1.	Industrial towns- Pollution from Industrial Effluent.	No Pollution is being done from Industrial Effluent of SAIL/Bokaro Steel Plant as the Bokaro Steel Plant (BSL) has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. The Bokaro Steel Plant is also equipped with Effluent Treatment Plants and only treated effluents/storm water are being discharged from the plant. Treated effluents qualities are also being monitored through 3-Tier system:- a. Real time monitoring through Online Effluent Quality Monitoring System, data is being sent on real time basis to JSPCB & CPCB servers. b. Sampling and analysis of effluent twice in a day through In-House Laboratory of Bokaro Steel Plant. c. 3rd party monitoring of effluent quality through NABL accredited & MoEFCC recognized Laboratory. The effluent quality remains well with-in the stipulated norms. Copy of effluent Monitoring Report from NABL accredited & MoEFCC recognized lab is attached as Annexure-1 .
	Industrial towns- Pollution from Hazardous Waste	SAIL/Bokaro Steel Plant has a well laid system for handling hazardous waste and no pollution is being done by SAIL/Bokaro Steel Plant from Hazardous Waste. Bokaro Steel Plant is having its own captive secured land fill (Hazardous Waste Pit). All the Hazardous waste being generated in the BSL is either used internally inside the Plant or sold to authorized Hazardous Waste recyclers and the rest material is sent to the Secured land fill (Hazardous Waste Pit). Latest Hazardous Waste return filed by BSI. has been attached as Annexure-2 .
2.	Some ETPs Non- Performance & Bypass into drain	All the ETPs installed at SAIL/Bokaro Steel Plant (BSL) including ETPs installed at Outfall-1, Outfall-2, Coke Oven (BOD Plant) and CRM-3 is working satisfactorily and no effluent is discharged/bypassed in the drain or

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इस्पात भवन
बेकारो स्टील सिटी- 827 001
जिला : बेकारो (झारखण्ड)
फैक्स संख्या : 06542 242099
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REF NO.इसीस / इएमएस / 50 / 2024- 103

DATE 09/03/2024

		Damodar river without treatment. Bokaro Steel Plant has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. In our endeavour to achieve ZLD, two effluent treatment plants at Outfall-1 and Outfall-2 of 1500 m ³ /Hr capacity each, have been installed where effluents/storm water drain are treated and sent back to Cooling Ponds of BSL for reuse. The ETPs are working satisfactorily and regular monitoring of treated effluent quality is carried out by BSL (pics of ETPs attached as Annexure-3).
4.	Fly Ash from TPP (e.g. Bokaro)	No Fly-Ash is being generated from Bokaro Steel Plant as SAIL/BSL is not having any Thermal Power Plant (TPP).
6.	Coke Oven Plants- Produce Tar Oil, Cyanide, Ammonia and Phenol	No Pollution is being caused by Coke Oven Plant of SAIL/Bokaro Steel Plant, as the effluent generated from the Coke Oven is treated in BOD (Biological Oxidation & De-phenolization) Plant and the treated effluent is being recycled & reused in the process. The 3rd party monitoring report of the BOD Plant effluent quality with all the parameters within the norm has been attached as Annexure -4 .
7.	The Bokaro Steel and IISCO drain their effluent directly into the river Damodar.	No Effluent from Bokaro Steel Plant is drained/discharged directly into the river Damodar without proper Treatment as the Bokaro Steel Plant (BSL) has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. The Bokaro Steel Plant is also equipped with Effluent Treatment Plants and only treated effluents/storm water are being discharged from the plant. Treated effluents qualities are also being monitored through 3-Tier system:- a. Real time monitoring through Online Effluent Quality Monitoring System, data is being sent on real time basis to JSPCB & CPCB servers. b. Sampling and analysis of effluent twice in a day through In-House Laboratory of Bokaro Steel Plant. c. 3rd party monitoring of effluent quality through NABL accredited & MoEFCC recognized Laboratory. The effluent quality remains well with-in the stipulated norms. Copy of effluent Monitoring Report from NABL accredited & MoEFCC recognized lab is attached as Annexure-1 .
9.	Sewage discharge (mixed drain/kucha drain contamination)	Bokaro Steel is having, lagoon based STR for treatment of sewage water from plant as well as township, which is an established system for treatment of sewage. The same is included in the State wise inventory list of Sewage Treatment Plants published by CPCB (copy enclosed- page No.28 of State wise details of STPs- Annexure-5). The sewage quality is being regularly monitored through in house environmental laboratory of Bokaro Steel Plant and 3rd party monitoring through NABL accredited and MoEFCC

33002

स्टील अथॉरिटी ऑफ इण्डिया लि०
बेकारो स्टील प्लान्ट
इस्पात भवन
बेकारो स्टील सिटी- 827 001
जिला : बेकारो (झारखण्ड)
फैक्स संख्या : 06542 242099
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REF NO.इसीस / इएमएस / 50 / 2024- 103

DATE 09/03/2024

		recognized laboratory. The treatment facility is working effectively and the discharge quality is well within the applicable standards. Copy of Report attached as Annexure -6.
10.	Municipal waste/legacy waste disposal detailed status required.	The Public Health Department of SAIL/Bokaro is providing Municipal Waste Processing & Disposal services to over 47000 unit/family spread across Bokaro Steel Township, with the help of 157 tri-cycles, 02 compactors, 650 Bins, 1 JCB, 1 Dumper Placer & 177 health workers with annual budget of Rs. 6.79 Crores. The job include, door to door collection of garbage, segregation of Wet & Dry waste, recycling of Plastic & Metallic Waste & proper disposal of waste. Another State of the Art Integrated facility for Municipal Solid Waste Management has been conceptualized where Bio-Gas will be generated from Municipal Solid Waste for which DPR has been prepared and the proposal is being processed for tendering.
	Biomedical Waste disposal detailed status required.	Bokaro General Hospital (BGH) is operating with valid Bio-Medical Authorization and is having a 50 Kg/hour capacity twin chamber (primary & secondary) captive Incinerator for proper disposal of Bio-Medical Waste. All the Bio-Medical waste generated by the BGH is properly collected, segregated and disposed off as per the provision of Bio-Medical Waste Management Rules -2016. Copy of Bio-Medical Waste generation & disposal status for the month of Feb-24 has been attached as Annexure-7.

Key Pollution Issues Section Reply (SAIL/Bokaro Steel Plant) :-

Sl.	Issue raised	Status of Compliance/Our submission.
8.	Disposal of Fly Ash from TPP (e.g. Bokaro)	No Fly-Ash is being generated from Bokaro Steel Plant as SAIL, BSL is not having any Thermal Power Plant (TPP).
9.	The Over burden (OB) of mines, the rejects of coal washeries and ash of Thermal Power Plants are kept either on the river bed or near the river, which sooner or later go the river.	SAIL/Bokaro Steel Plant is not having any mines/coal washeries at Bokaro District, so no Over burden (OB) of mines, the rejects of coal washeries pertaining to SAIL/Bokaro Steel Plant go to the river. SAIL/Bokaro Steel Plant is not having any Thermal Power Plant so no Fly Ash is being generated by SAIL/Bokaro Steel Plant.
	Further, the 11 sewage of towns, township and suburbs find ways to downstream	Bokaro Steel is having, lagoon based STP for treatment of sewage water from plant as well as township, which is an established system for treatment of sewage. The same is included in the State wise inventory list of Sewage Treatment Plants published by CPCB (copy enclosed- page No.28 of State wise details of STPs- Annexure-5). The sewage quality is being regularly monitored through in house environmental laboratory of Bokaro Steel Plant

33003

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DATE 09/03/2024

	through septic tanks and soak pits.	and 3rd party monitoring through NABL accredited and MoEFCC recognized laboratory. The treatment facility is working effectively and the discharge quality is well within the applicable standards. Copy of Report attached as Annexure -6 .
11.	Coke Oven Plants- Produce Tar Oil, Cyanide, Ammonia and Phenol	No Pollution is being caused by Coke Oven Plant of SAIL/Bokaro Steel Plant, as the effluent generated from the Coke Oven is treated in BOD (Biological Oxidation & De-phenolization) Plant and the treated effluent is being recycled & reused in the process. The 3rd party monitoring report of the BOD Plant effluent quality with all the parameters within the norm has been attached as Annexure -3 .
12.	The Bokaro Steel and IISCO drain and other Industries polluting river Damodar.	No Pollution is being done from Industrial Effluent of SAIL/Bokaro Steel Plant as the Bokaro Steel Plant (BSL) has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. The Bokaro Steel Plant is also equipped with Effluent Treatment Plants and only treated effluents/storm water are being discharged from the plant. Treated effluents qualities are also being monitored through 3-Tier system:- a. Real time monitoring through Online Effluent Quality Monitoring System, data is being sent on real time basis to JSPCB & CPCB servers. b. Sampling and analysis of effluent twice in a day through In-House Laboratory of Bokaro Steel Plant. c. 3rd party monitoring of effluent quality through NABL accredited & MoEFCC recognized Laboratory. The effluent quality remains well with-in the stipulated norms. Copy of effluent Monitoring Report from NABL accredited & MoEFCC recognized lab is attached as Annexure-1 .

Our humble submission is, as a responsible corporate, SAIL/Bokaro Steel Plant is committed to take all major steps to ensure environmental compliance and conservation.

Submitted for your kind information please.

सधन्यवाद ।
वास्ते सेल/बेकारो स्टील प्लान्ट

नितेश
09/03/24

N Ranjan

Actg. GM (Environment & Sustainability)
SAIL/Bokaro Steel Plant

Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600,Valid until 03.08.2024 in the field of Testing]
QCI-NABET Accredited EIA Consulting Organization
STP/ETP/WTP Project Management Consultants

Lab :Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL Bokaro Steel City-827001 Jharkhand, INDIA	ULR NO. : ULR-TC560024000000054F REPORT NO. : UT/ELS/ REPORT/0070/01-2024 ISSUE DATE : 06/01/2024 YOUR REF. : 4565049629 REF. DATE : 18/10/2023
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SAMPLE PARTICULARS : Sampling Plan Ref. No.: 42-12/2023 Sampling Procedure : UT/LQMS/SOP/W01A Date & Time of Sampling : 29/12/2023 16:05 Hrs. Sample Registration Date : 02/01/2024 Analysis Starting Date : 02/01/2024 Analysis Completion Date : 06/01/2024 Sample Collected By : ULTRA TECH Sample Lab Code : UT/ELS/009/01-2024	WASTE WATER SAMPLE ANALYSIS Sample Type : Treated Effluent Waste Water Sample Location : Outfall No 01 Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease. 2L in Polyethylene Container.
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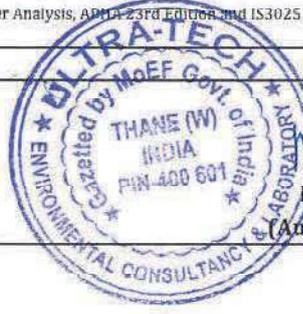
Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	6.8	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	10	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	9.1	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	48	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	3.1	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
1. This test report refers only to the sample tested.
 2. This test report may not be reproduced in part, without the permission of this laboratory.
 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,
Manasi Namjoshi
Manasi Namjoshi
(Authorized Signatory)

Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
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Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL Bokaro Steel City-827001 Jharkhand, INDIA	ULR NO. : ULR-TC56002400000055F REPORT NO. : UT/ELS/ REPORT/0071/01-2024 ISSUE DATE : 06/01/2024 YOUR REF. : 4565049629 REF. DATE : 18/10/2023
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SAMPLE PARTICULARS : Sampling Plan Ref. No.: 42-12/2023 Sampling Procedure : UT/LQMS/SOP/W01A Date & Time of Sampling : 29/12/2023 16:30 Hrs. Sample Registration Date : 02/01/2024 Analysis Starting Date : 02/01/2024 Analysis Completion Date : 06/01/2024 Sample Collected By : ULTRA TECH Sample Lab Code : UT/ELS/010/01-2024	WASTE WATER SAMPLE ANALYSIS Sample Type : Treated Effluent Waste Water Sample Location : Outfall No 02 Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease. 2L in Polyethylene Container.
--	--

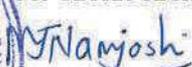
Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	7.5	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	19	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	7.9	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	40	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	0.9	mg/L	-
7	Cyanide as CN	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
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 - This test report may not be reproduced in part, without the permission of this laboratory.
 - Any correction invalidates this test report.
 - Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -

For ULTRA TECH,

Manasi Namjoshi
(Authorized Signatory)

ANN 33006

स्टील अथॉरिटी ऑफ इण्डिया लि०
बोकारो स्टील प्लान्ट
इस्पात भवन
बोकारो स्टील सिटी - 827 001
जिला : बोकारो (झारखण्ड)
फैक्स संख्या : 06542 242099
दूरभाष संख्या 06542 246605



STEEL AUTHORITY OF INDIA LTD.
BOKARO STEEL PLANT
ISPAT BHAWAN
BOKARO STEEL CITY - 827001
DISTRICT - BOKARO (JHARKHAND)
Ph. No. 06542 246605 Fax No. 242099
E-mail : bs1.environment@sail.in

REF NO. इसीएस/इएमएस/12/2023-271

DATE 28/06/2023

सेवा में,

सदस्य सचिव
झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद
टी ए डिविजन बिल्डिंग
एच० ई० सी० कम्प्लेक्स
धुर्वा
रांची 834 004

विषय : वित्तीय वर्ष 2022-23 में हाजरडस वेस्ट अनुपालन प्रतिवेदन ।

महाशय,

वित्तीय वर्ष 2022-23 में बोकारो स्टील प्लान्ट के हाजरडस का वेस्ट अनुपालन प्रतिवेदन अवलोकनार्थ एवं उचित कारबाई हेतु संलग्न है।

सधन्यवाद ।

आपका विश्वासी
वास्ते सेल/बोकारो स्टील प्लान्ट
नवीन 28.6.23
एन पी श्रीवास्तव
महाप्रबंधक/पर्यावरण संरक्षण

प्रतिलिपि

क्षेत्रीय पदाधिकारी
झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद
हाउसिंग कोलोनी
एच आई जी-1
बरटांड
धनबाद-826001

FORM 4

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

FORM FOR FILING 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	M/s SAIL, Bokaro Steel Plant, Bokaro Steel City, Bokaro, 827001, Jharkhand
2.	Authorization No. and Date of issue	JSPCB/HO/RNC/HWM-9174576/2021/5 dated: 09.02.2021
3.	Name of the authorized person and full address with telephone, fax number and e-mail	NP Srivastava, GM/ECS, SAIL/BSL, Paryavaran Bhawan, Bokaro Steel Plant, Telephone No. 06542-246605, Fax No. 06542-242099, Mail ID- bsl.environment@sail.in
4.	Production during the year (product wise), wherever applicable	<ul style="list-style-type: none"> ➤ HR Coil-2193046 Tonne ➤ HR Plate-433696 Tonne ➤ HR Sheet-124766 Tonne ➤ CR Coil/Slit Coil -910828 Tonne ➤ CR Sheet-7759 Tonne ➤ GP/GC(Coil/Sheet)- 71896 Tonne

Part A. To be filled by hazardous waste generators

1.	Total quantity of waste generated category wise	As per Annexure-1
2.	Quantity dispatched (i) To disposal facility (ii) To recycler or co-processors or pre-processor (iii) others	As per Annexure-1
3.	Quantity utilized in-house, if any-	As per Annexure-1
4.	Quantity in storage at the end of the year	Nil

Part B. To be filled by treatment, storage and disposal facility operators

1.	Total quantity received	As per Annexure-1
2.	Quantity in stock at the beginning of the year	Nil
3.	Quantity treated	As per Annexure-1
4.	Quantity disposed in landfills as such and after treatment	As per Annexure-1
5.	Quantity incinerated(if applicable)	Nil
6.	Quantity processed other than specified above	As per Annexure-1
7.	Quantity in storage at the end of the year	Nil

33008

Part C. To be filled by recyclers or co-processors or other users

1.	Quantity of waste received during the year- (i) domestic sources (ii) imported(if applicable)	Not Applicable
2.	Quantity in stock at the beginning of the year	
3.	Quantity recycled or co-processed or used	
4.	Quantity of products dispatched(whenever applicable)	
5.	Quantity of waste generated	
6.	Quantity of waste disposed	
7.	Quantity re-exported (whenever applicable)	
8.	Quantity in storage at the end of the year	

Signature
28/6/23

एन० पी० श्रीवास्तव
महाप्रबन्धक
पर्यावरण संरक्षण एवं सस्टेनेबिलिटी
सेल, बोकारो स्टील सिटी

Signature of the Occupier or Operator of the disposal facility

Date: 26.06.2023

Place: Bokaro Steel City


Annexure - I
Steel Authority of India Limited
Bokaro Steel Plant

DETAILS OF HAZARDOUS WASTE GENERATION & DISPOSAL DURING 2022-23

SN	HAZARDOUS WASTE	ANNUAL QTY (T)	SOURCE OF GENERATION	TYPE OF DISPOSAL	Storage duration	CATEGORY OF WASTE
1.	Acidic Tar Sludge	980	By product plant of coke oven	* 967.32T Disposed in captive secured land fill on regular basis * 12.680 T sold to Authorised recycler	NIL	13.4 of Schedule - I
2.	Spent Vanadium Pentoxide	0.700	do	Dispose in captive secured land fill as & when generated	7 days	17.2 of Schedule - I
3.	Sulphur Sludge	280	do	dc	7 days	17.1 of Schedule - I
4.	Decanter Tar Sludge	1290	do	410 T Charged with coal blend in Coke oven batteries 19.685 T Disposed in captive secured land fill or regular basis 860.315 T sold to Authorised recycler	NIL	13.3 of Schedule - I
5.	Tar Muck with Sand etc.	210	do	Disposed in captive secured land fill on regular basis	NIL	13.3 of Schedule - I
6.	Oil & Grease Muck	165.40	Mills area	Disposed in captive secured land fill on regular basis	7 days	13.4 of Schedule - I
7.	Asbestos Rope	0.1	Coke oven area	Dispose in captive secured land fill as & when generated	NIL	4.1 of Schedule - I 4.4 of Schedule - I
8.	Transformer oil	36 KL	DNW	Sold to authorized buyer within one month of its generation	30 days	15.2 of Schedule - I
9.	Oil sludge from oil regeneration unit	1.24	Oil regeneration unit	Disposed in captive secured landfill on monthly basis	30 days	4.1 of Schedule - I
10.	Zinc dross	377.03	HDGC/CRM	Sold to authorized buyer within one month of its generation	30 days	5.3 of Schedule - I
11.	Zinc ash	0	do	dc	30 days	6.2 of Schedule - I, C-14 of Schedule - II
12.	Used batteries	2285	Mills/Iron zone/OG/Traffic	dc	30 days	C-12.3 of Schedule - I C-14 of Schedule - II
13.	ETP sludge	825	BOD plant of COBP	Charged in Coke Oven batteries by mixing in coal	NIL	35.3 of Schedule - I
14.	Flue Dust	59680	Blast Furnaces	Reuse in internal process	7 days	35.1 of Schedule - I

HAZARDOUS WASTE AUTHORIZATION REF. No.: JS>CB/HO/RNC/HWM-9174576/2021/5 dated: 09.02.2021, valid up to 31.12.2025

N.Ranjan, AGM/ECS

निदेश रंजन
सहायक महाप्रबन्धक
पर्यावरण संरक्षण एवं सस्टेनेबिलिटी
सेल, बोकारो स्टील प्लान्ट

N.P. Srivastava, GM/ECS

महाप्रबन्धक
पर्यावरण संरक्षण एवं सस्टेनेबिलिटी
सेल, बोकारो स्टील प्लान्ट

28.6.23

एन० पी० श्रीवास्तव

Effluent Treatment Plants at SAIL/Bokaro Steel Plant



ETP of OF-1



Flash Mixture tank for Chemical Dosing



Baffles



Settling Tank



Final treated water of OF-1

33011



ETP of OF-2

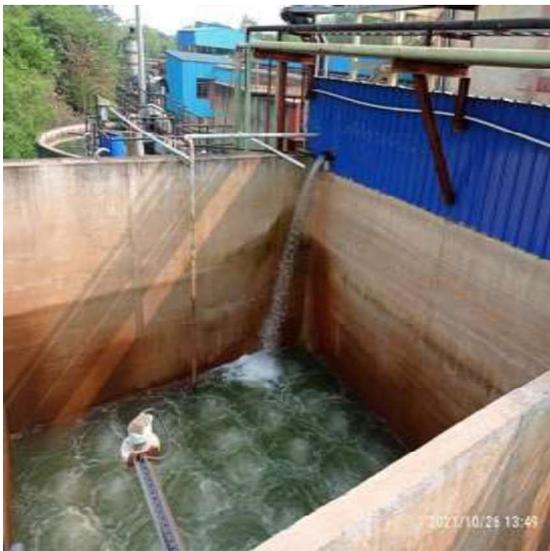


Final treated water of OF-2



Panels of ETP of OF-2

33012



CRM-3 ETP & TTP

33013



BOD Plant of SAIL/Bokaro Steel Plant (Coke Oven)

Environmental Consultancy & Laboratory

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Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
QCI-NABET Accredited EIA Consulting Organization
STP/ETP/WTP Project Management Consultants

Lab : Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
Tel : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL
Bokaro Steel City-827001
Jharkhand, INDIA

ULR NO. : ULR-TC560024000000662F
REPORT NO. : UT/ELS/REPORT/0827/02-2024
ISSUE DATE : 09/02/2024
YOUR REF. : 4565049629
REF. DATE : 18/10/2023

SAMPLE PARTICULARS :
Sampling Plan Ref. No.: 43-01/2024
Sampling Procedure : UT/LQMS/SOP/W01A
Date & Time of Sampling : 27/01/2024 14:15 Hrs.
Sample Registration Date : 01/02/2024
Analysis Starting Date : 01/02/2024
Analysis Completion Date : 07/02/2024
Sample Collected By : ULTRA TECH
Sample Lab Code : UT/ELS/028/02-2024

WASTE WATER SAMPLE ANALYSIS
Sample Type : Treated Effluent Waste Water
Sample Location : BOD (Plant Outlet)-CCT
Sample Quantity & : 1L in Wide Mouth Glass Bottle for Oil & Grease.
Packaging Details : 2L in Polyethylene Container.

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	6.3	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	51	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	2	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	13	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	140	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	33	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

Remark/ Statement of Conformity: Nil

- Note:**
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 2. This test report may not be reproduced in part, without the permission of this laboratory.
 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,
Manjoshi
Manasi Namjoshi
(Authorized Signatory)

CONTROL OF URBAN POLLUTION
SERIES: CUPS/ / 2015

INVENTORIZAZION OF SEWAGE
TREATMENT PLANTS



MARCH, 2015

CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment and Forests, Govt. of India)
Parivesh Bhawan, East Arjun Nagar,
Delhi - 110032

[INVENTORIZACION OF SEWAGE TREATMENT PLANTS]

Sl. No	City/town	STP Location	STP Commissioned in (Year)	Status (Operational/ Non-Operational/ Under Construction)	STP Installed Capacity MLD	Technology (UASB / ASP / OP / SBR / MBR/ FAB Etc.)	Consent Status
19		B.D.Cantt Srinagar	Under Army	do	5	ASP	

4.15 STPs AT JHARKHAND

Jharkhand has 15 numbers of sewage treatment plants having treatment capacity of 117.24 MLD. Details of STPs of Jharkhand are shown in Table 16.

Table 16: STPs-Jharkhand

Sl.No.	City/town	STP Location	STP Commissioned in (Year)	Status (Operational/ Non-Operational/ Under Construction)	STP Installed Capacity MLD	Technology (UASB / ASP / OP / SBR / MBR/ FAB Etc.)	Consent Status
1.	Bokaro	IEL Gomia Township	50 years ago	Operational	1.6	SAS	No
2.		BSL Township(a) Sector 12	Not Known	Operational	10.4	Lagoon	Information not provided
3.		(b) Sector 6	Not Known	Operational	5.85	Lagoon	
4.		(c) Sector 11	Not Known	Operational	2.57	Lagoon	
5.		(d) Dhandabara	Not Known	Operational	11.4	Lagoon	
6.		(e) Camp II	Not Known	Operational	0.582	Lagoon	
7.		(f) BGH	Not Known	Operational	1.17	Lagoon	
8.	Jmshedpur	STP Kharkai	1952	Operational	16	ASP	31/12/2014
9.		STP Bara	1994	Operational	45	ASP	31/12/2014
10.		Baridih STP Unit-I	1952	Operational	4.5	OP	Up to 2013
11.		Baridih STP Unit-II	1964	Operational	7.65	OP	Up to 31/12/2013
12.	UCIL Jadugora, ES	Jadugoda STP	1995	Operational	4.086	ASP	Up to 31/12/2012
13.		NarwaPahar STP	1995	Operational	2	ASP	Up to 31/12/2012
14.	HCL Moubhandar	Moubhandar	1985	Operational	0.8	Classified	Up to 31/12/2007
15.		Moubhandar		Operational	3.636	Filtration	Up to 31/12/2007



TC-5600

ISO 9001 : 2015
ISO 45001 : 2018

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Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
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STP/ETP/WTP Project Management Consultants

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Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL
Bokaro Steel City-827001
Jharkhand, INDIA

ULR NO. : ULR-TC560024000000056F
REPORT NO. : UT/ELS/REPORT/0072/01-2024
ISSUE DATE : 06/01/2024
YOUR REF. : 4565049629
REF. DATE : 18/10/2023

SAMPLE PARTICULARS :
Sampling Plan Ref. No.: 42-12/2023
Sampling Procedure : UT/LQMS/SOP/W01A
Date & Time of Sampling : 30/12/2023 10:20 Hrs.
Sample Registration Date : 02/01/2024
Analysis Starting Date : 02/01/2024
Analysis Completion Date : 06/01/2024
Sample Collected By : ULTRA TECH
Sample Lab Code : UT/ELS/011/01-2024

WASTE WATER SAMPLE ANALYSIS
Sample Type : Waste Water
Sample Location : Oxidation Pond Sector 12
Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease.
2L in Polyethylene Container.

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	7.5	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	14	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	8.7	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	60	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	1.9	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	0.08	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit

DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
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 - Any correction invalidates this test report.
 - Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,

Manasi Namjoshi

Manasi Namjoshi

(Authorized Signatory)



TC-5600

ISO 9001 : 2015
ISO 45001 : 2018

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Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
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Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL
Bokaro Steel City-827001
Jharkhand, INDIA

ULR NO. : ULR-TC560024000000057F
REPORT NO. : UT/ELS/ REPORT/0073/01-2024
ISSUE DATE : 06/01/2024
YOUR REF. : 4565049629
REF. DATE : 18/10/2023

SAMPLE PARTICULARS :
Sampling Plan Ref. No. : 42-12/2023
Sampling Procedure : UT/LQMS/SOP/W01A
Date & Time of Sampling : 30/12/2023 11:05 Hrs.
Sample Registration Date : 02/01/2024
Analysis Starting Date : 02/01/2024
Analysis Completion Date : 06/01/2024
Sample Collected By : ULTRA TECH
Sample Lab Code : UT/ELS/012/01-2024

WASTE WATER SAMPLE ANALYSIS
Sample Type : Waste Water
Sample Location : Oxidation Pond BGH
Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease.
2L in Polyethylene Container.

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	6.9	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	19	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	7.5	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	48	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	1.1	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit

DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
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 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,

Manasi Namjoshi

Manasi Namjoshi

(Authorized Signatory)



TC-5600

ISO 9001 : 2015
ISO 45001 : 2018

Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
QCI-NABET Accredited EIA Consulting Organization
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Lab : Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL Bokaro Steel City-827001 Jharkhand, INDIA	ULR NO. : ULR-TC560024000000058F REPORT NO. : UT/ELS/REPORT/0074/01-2024 ISSUE DATE : 06/01/2024 YOUR REF. : 4565049629 REF. DATE : 18/10/2023
--	---

SAMPLE PARTICULARS :	WASTE WATER SAMPLE ANALYSIS
Sampling Plan Ref. No. : 42-12/2023	Sample Type : Waste Water
Sampling Procedure : UT/LQMS/SOP/W01A	Sample Location : Oxidation Pond Sector 06
Date & Time of Sampling : 30/12/2023 11:30 Hrs.	
Sample Registration Date : 02/01/2024	
Analysis Starting Date : 02/01/2024	Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease. 2L in Polyethylene Container.
Analysis Completion Date : 06/01/2024	
Sample Collected By : ULTRA TECH	
Sample Lab Code : UT/ELS/013/01-2024	

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	7.3	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	18	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	7.9	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	72	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	1.4	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

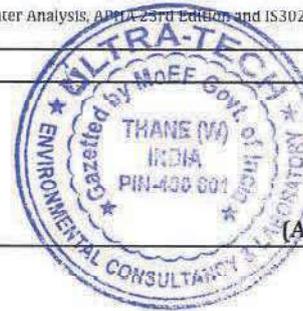
BDL: Below Detection Limit

DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
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 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,
Manasi Namjoshi
Manasi Namjoshi
(Authorized Signatory)



TC-5600

ISO 9001 : 2015
ISO 45001 : 2018

Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
QCI-NABET Accredited EIA Consulting Organization
STP/ETP/WTP Project Management Consultants

Lab : Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL Bokaro Steel City-827001 Jharkhand, INDIA	ULR NO. : ULR-TC56002400000060F REPORT NO. : UT/ELS/ REPORT/0076/01-2024 ISSUE DATE : 06/01/2024 YOUR REF. : 4565049629 REF. DATE : 18/10/2023
--	---

SAMPLE PARTICULARS : Sampling Plan Ref. No.: 42-12/2023 Sampling Procedure : UT/LQMS/SOP/W01A Date & Time of Sampling : 30/12/2023 12:25 Hrs. Sample Registration Date : 02/01/2024 Analysis Starting Date : 02/01/2024 Analysis Completion Date : 06/01/2024 Sample Collected By : ULTRA TECH Sample Lab Code : UT/ELS/015/01-2024	WASTE WATER SAMPLE ANALYSIS Sample Type : Waste Water Sample Location : Oxidation Pond, Dhandabra Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease. 2L in Polyethylene Container.
--	--

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	7.4	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	11	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	6.8	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	76	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	1.7	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit DL: Detection Limit

Remark/ Statement of Conformity: Nil

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3. Any correction invalidates this test report.
4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,
MJ Namjoshi
Manasi Namjoshi
(Authorized Signatory)

Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
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Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL
Bokaro Steel City-827001
Jharkhand, INDIA

ULR NO. : ULR-TC560024000000061F
REPORT NO. : UT/ELS/REPORT/0077/01-2024
ISSUE DATE : 06/01/2024
YOUR REF. : 4565049629
REF. DATE : 18/10/2023

SAMPLE PARTICULARS :
Sampling Plan Ref. No.: 42-12/2023
Sampling Procedure : UT/LQMS/SOP/W01A
Date & Time of Sampling : 30/12/2023 12:55 Hrs.
Sample Registration Date : 02/01/2024
Analysis Starting Date : 02/01/2024
Analysis Completion Date : 06/01/2024
Sample Collected By : ULTRA TECH
Sample Lab Code : UT/ELS/016/01-2024

WASTE WATER SAMPLE ANALYSIS
Sample Type : Waste Water
Sample Location : Oxidation Pond, Camp 02
Sample Quantity & Packaging Details : 1L in Wide Mouth Glass Bottle for Oil & Grease.
2L in Polyethylene Container.

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	6.8	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	12	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/L	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	7.5	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	84	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	BDL[DL=0.5]	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

BDL: Below Detection Limit

DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:**
1. This test report refers only to the sample tested.
 2. This test report may not be reproduced in part, without the permission of this laboratory.
 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CLPB's Guide Manual: Water & Wastewater Analysis, APHA, 23rd Edition and IS3025 (Part 1).

- END OF REPORT -

For ULTRA TECH,
Manasi Namjoshi
Manasi Namjoshi
(Authorized Signatory)



Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
QCI-NABET Accredited EIA Consulting Organization
STP/ETP/WTP Project Management Consultants

Lab : Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. BOKARO STEEL PLANT/SAIL	ULR NO. : ULR-TC56002400000059F
Bokaro Steel City-827001	REPORT NO. : UT/ELS/ REPORT/0075/01-2024
Jharkhand, INDIA	ISSUE DATE : 06/01/2024
	YOUR REF. : 4565049629
	REF. DATE : 18/10/2023

SAMPLE PARTICULARS :		WASTE WATER SAMPLE ANALYSIS	
Sampling Plan Ref. No.:	: 42-12/2023	Sample Type	: Waste Water
Sampling Procedure	: UT/LQMS/SOP/W01A	Sample Location	: Oxidation Pond-Sector 11
Date & Time of Sampling	: 30/12/2023 12:00 Hrs.		
Sample Registration Date	: 02/01/2024		
Analysis Starting Date	: 02/01/2024	Sample Quantity &	: 1L in Wide Mouth Glass Bottle for Oil & Grease.
Analysis Completion Date	: 06/01/2024	Packaging Details	: 2L in Polyethylene Container.
Sample Collected By	: ULTRA TECH		
Sample Lab Code	: UT/ELS/014/01-2024		

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits
1	pH @ 25° C	IS 3025 (Part 11):2022	7.4	-	-
2	Total Suspended Solids	IS 3025 (Part 17):1984	13	mg/L	-
3	Oil & Grease	IS 3025 (Part 39):2021	BDL[DL=2]	mg/l.	-
4	Biochemical Oxygen Demand (27°C, 3Days)	IS 3025 (Part 44):1993	7.9	mg/L	-
5	Chemical Oxygen Demand	IS 3025 (Part 58):2006	64	mg/L	-
6	Ammonia as NH ₃ -N	IS 3025 (Part 34): 1988	1.5	mg/L	-
7	Cyanide as CN ⁻	IS 3025 (Part 27/Sec 1):2021	BDL[DL=0.02]	mg/L	-
8	Phenols	APHA 23rd Ed. 5530 D	BDL[DL=1]	mg/L	-

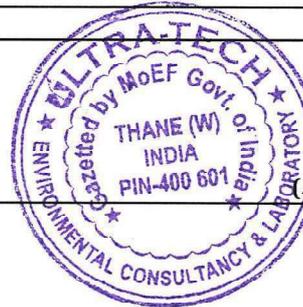
BDL: Below Detection Limit

DL: Detection Limit

Remark/ Statement of Conformity: Nil

- Note:
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 3. Any correction invalidates this test report.
 4. Sample was collected using laboratory's SOP (UT/LQMS/SOP/W01A) based on CPCB's Guide Manual: Water & Wastewater Analysis, APHA 23rd Edition and IS3025 (Part 1).

- END OF REPORT -



For ULTRA TECH,

M. Namjoshi

Manasi Namjoshi

(Authorized Signatory)

33023

ANNEXURE-1

[SEE rules 3(e), 4(b), 7(1), 7(2), 7(5), 7(6) and 8(2)] Part-1

BMW IN BGH FOR THE MONTH OF FEBRUARY - 2024

Category	TYPE OF WASTE	TYPE OF BAG OR CONTAINER TO BE USED	TREATMENT AND DISPOSAL OPTION	QUANTITY KG/MONTH
1	2	3	4	5
	(a) Human Anatomical waste: human tissues, organs, body part and fetus below the viability period (as per the medical termination of pregnancy act 1971, amended from time to time).	yellow coloured non chlorinated plastic bags	Incineration	103 kg
	(b) Animal Anatomical waste: Experimental animal carcasses, body parts, organs, tissues, including the waste generated from animals used in experiments or testing in veterinary hospital or colleges or animal houses.		Incineration	NOT APPLICABLE
yellow	(c) Soiled waste: items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and blood components.		Incineration	1359 kg
	(d) Expired or discarded medicines: Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.	Yellow coloured non-chlorinated plastic bags or containers	Incineration	NIL
	(e) Chemical waste: chemical used in production of biological and used or discarded disinfectants.	yellow coloured containers or non-chlorinated plastic bags	Disposed of by incineration	85 kg
	(f) Chemical liquid waste: Liquid waste generated due to use of chemical in production of biological and used or discarded disinfectants, silver x-ray developing liquid, discarded formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities etc. 36.00	separate collection system leading to effluent treatment system	Treated in BGH Oxidation pond prior to disposal	1250 Ltr

डॉ. एस. ए. अग्रवाल
Dr. S. A. Agrawal

अपर मुख्य चिकित्सा अधिकारी (चर्म एवं मृत्त रोग)
ADDL. C.M.O. (SKIN & V.D.)
बाकारो जेनरल अस्पताल
BOKARO GENERAL HOSPITAL
CODE SKA



33024

	(g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.	Non-chlorinated yellow plastic bags or suitable packing material	Non-chlorinated chemical disinfection followed by incineration	37 kg
	(h) Microbiology, biotechnology and other clinical laboratory waste: Blood bags, laboratory cultures, stocks or specimens of microorganisms, live or attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures.	Autoclave safe plastic bags or containers	pre-treated to sterilize with non-chlorinated chemicals on site as per National AIDS control organisation or world health organisation guidelines thereafter for incineration.	81 kg
RED	Contaminated waste (Recyclable) (a) wastes generated from disposable item such as tubing, bottle, intravenous tubes and sets, catheters, urine bags, syringes(without needles and fixed needle syringes)and vaccutainers with their needles cut) and gloves.	Red coloured non-chlorinated plastic bags or containers.	Autoclaving or microwaving/ hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for road making	839 kg 700 gm
White(translucent)	Waste sharp including metal: needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps	puncture proof, leak proof, tamper proof containers	Autoclaving or Dry heat sterilization followed by shredding or mutilation.	9 kg 200 gm
Blue	(a) Glassware: broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.	Cardboard boxes with blue colored marking	Disinfection(by soaking the washed glass waste after cleaning with detergent and sodium hypochlorite treatment or through autoclaving or microwaving or hydroclaving and then sent for recycling.	749 kg
	(b) Metallic Body Implants	cardboard boxes with blue colored marking		1 kg

N. N. 4131


डॉ. एस. ए. अग्रवाल
 Dr. S. K. AGRAWAL
 अपर मुक्त चिकित्सा अधिकारी (चर्म एवं युक्त रोग)
 ADDL. C.M.O (SKIN & V.D.)
 बोकारो जेनरल अस्पताल
 BOKARO GENERAL HOSPITAL
 CODE: SKA



कार्यालय चास नगर निगम, चास (बोकारो)

आईटीआई गोड़, चारा, बोकारो पिन-827013
E-mail:- chasmunicipalcouncil@gmail.com

पत्रांक 656

दिनांक 11/03/2024

प्रेषक,

प्रशासक
-सह-
अपर नगर आयुक्त,
चास नगर निगम, चास।

सेवा में,

उपायुक्त,
बोकारो।

विषय :- दिनांक 24/02/2024 को उपायुक्त, बोकारो की अध्यक्षता में आयोजित जिला गंगा समिति (District Ganga Committee) की बैठक की कार्यवाही का अनुपालन प्रतिवेदन का प्रेषण।

प्रसंग :- भवदीय ज्ञापांक 290/विधि, दिनांक 27/02/2024
महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के अनुपालन में चास नगर निगम से संबंधित कंडिकावार अनुपालन प्रतिवेदन संशोधित विहित प्रपत्र में तैयार कर पुनः इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु भेजा जाता है।

सादर सूचनार्थ समर्पित।

अनु०:- यथोपरि

विश्वासभाजन


11.03.24

प्रशासक
-सह-

अपर नगर आयुक्त
चास नगर निगम।


11/03/24

NGT Report

SL No.	Issues	Remarks
01	Industrial towns Pollution from industrial effluents and hazardous waste	Chas Municipal Corporation is a small town and there is no registered industrial unit in the municipal area.
02	Some ETPs non performance and bypass into drain	
03	Sewage discharge (Mixed drain/ Kucha drain contamination)	12.44 MLD waste water from 70 small and medium drains fall into Garga River. DPR of various schemes related to rejuvenation, solid waste management, sewage treatment, conservation of water bodies under 15 th Finance Scheme have been sent to Urban Development & Housing Department for approval. The list of which is annexed with the report. Projects shall be taken up immediately after the approval in the near future.
04	Municipal Waste/Bio-medical waste/hazardous waste/legacy waste disposal detailed status required.	<p>Municipal Waste – Door to Door collection of solid waste is being done on daily basis in municipal area by agency hired by Chas Municipal Corporation. DPR is already prepared for Integrated SWM Project, due to land issue plant construction has not yet started.</p> <p>Bio-Medical Waste/ hazardous waste – Bio-medical waste from some hospitals/dispensaries is collected by an independent agency of Dhanbad in Chas Municipal area. Chas Municipal Corporation does not collect and dispose Bio-Medical Waste. All hospitals/dispensaries/clinics are instructed to execute MoU with agencies for collection of Bio-medical wastes.</p> <p>Legacy Waste– Remediation of legacy waste is in progress and 65% work is complete.</p>

Additional Municipal Commissioner
Chas Municipal Corporation

11/03/24

CHAS MUNICIPAL CORPORATION CHAS BOKARO		
15 TH FINANCE SCHEME		
TIED GRANT		
SL.NO	SCHEME NAME	AMOUNT
1	REJUVINATION OF GARGA RIVER UNDER CHAS MUNICIPAL CORPORATION.	235961000.00
2	DETAILED ESTIMATE FOR CONSERVATION OF GARGA RIVER ALONG MAJOR BRIDGE WITH FENCING WORKS TO PROTECT RIVER WATER FROM GARBAGE UNDER CHAS MUNICIPAL CORPORATION.	12687220.00
3	CONSTRUCTION OF 200 KLD SEWERAGE TREATMENT PLANT AT BHOLUR BANDH UNDER CHAS MUNICIPAL CORPORATION.	8282695.00
4	CONSERVATION OF PURNA BANDH FROM DRAINS FLOWING INTO THE POND AND CONSTRUCTION RIGID PAVEMENT AROUND PURNA BANDH UNDER CHAS MUNICIPAL CORPORATION.	11916100.00
5	REJUVINATION AND DESILTING WORKS AT SINGARI JORIYA UNDER CHAS MUNICIPAL CORPORATION.	31132500.00
6	CONSTRUCTION OF TELMACHO/GARGA BRIDGE UNDER CHAS MUNICIPAL CORPORATION.	26405000.00
7	CONSTRUCTION OF 200 KLD SEWERAGE TREATMENT PLANT AT SOLAGIDIH TALAB UNDER CHAS MUNICIPAL CORPORATION.	8300000.00
8	CONSTRUCTION OF 200 KLD SEWERAGE TREATMENT PLANT AT PURNA BANDH UNDER CHAS MUNICIPAL CORPORATION.	8301385.00
9	CONSTRUCTION OF 200 KLD SEWERAGE TREATMENT PLANT AT MAHATO BANDH UNDER CHAS MUNICIPAL CORPORATION.	8291867.00
10	DEVELOPMENT AND REJUVENATION OF KAMAL BANDH IN WARD NO 31, UNDER CHAS MUNICIPAL CORPORATION	16760400.00
	TOTAL	368038167.00

33028

कार्यालय फुसरो नगर परिषद (बोकारो) ।

पत्रांक 261 / न.प. फुसरो, दिनांक 09/03/24 /

प्रेषक,

कार्यपालक पदाधिकारी,
फुसरो नगर परिषद ।

सेवा में,

उपायुक्त,
बोकारो ।

विषय— दिनांक—24.02.2024 को आयोजित जिला गंगा समिति की बैठक का अनुपालन प्रतिवेदन के संबंध में ।

प्रसंग— भवदीय ज्ञापांक—290 / विधि बोकारो, दिनांक—27.02.2024

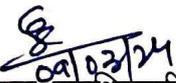
महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में सादर सूचित करना है कि दिनांक—24.02.2024 को आयोजित जिला गंगा समिति की बैठक का अनुपालन प्रतिवेदन तैयार किया गया है जिसकी छाया प्रति संलग्न कर आवश्यक कार्रवाई हेतु समर्पित किया जाता है ।

सादर सूचनार्थ समर्पित ।

अनु०—यथोक्त ।

विश्वासभाजन


कार्यपालक पदाधिकारी
09/03/24 फुसरो नगर परिषद ।

PHUSRO NAGAR PARISHAD (BOKARO)

SL. No.	Issues	Compliance	Remarks
1.	Industrial towns-pollution from industrial effluents and hazardous waste. Some ETPs non performance and bypass into drain	Phusro Nagar Parishad is a small town and there is no registered industrial unit in the Nagar Parishad area.	
2.	Sewage discharge(Mixed drain/kuchha drain contamination)	<ol style="list-style-type: none"> 1. Nagar Parishad Phusro has three natural drains (nallahs) which flow into the Damodar also carrying mixed urban sewage. 2. Sewage treatment plants of 10 MLD and 4 MLD are under construction along with Interception and diversion structures. 3. The respective sites are in Dhori khas ward no. 28 on Joria Nallah and Bermo Seam Ward no. 01 on Bodi Nallah. 	Work initiated, Sequencing Batch Reactor construction at foundation stage.
3.	Municipal Waste/Biomedical Waste/Hazardous waste disposal and related pollution	<p><u>Municipal Waste:</u></p> <ol style="list-style-type: none"> 1. Door to Door waste collection being executed by Phusro Solid waste management pvt ltd., a joint venture between N.P Phusro, Cube Bio Energy. 2. Total waste generated from the ULB as per DPR is 42 TPD. The main components of the processing facility in the DPR includes: Mechanical segregation facility, Wet waste processing facility, Material recovery facility, Construction and demolition waste facility, Landfill facility for 15% of daily waste generation, Storage of hazardous waste & incineration facility with a leachate tank. 3. Solid Waste Management Plant is under construction at Upar Dhoura Makoli, Ward no. 08. <p><u>Bio Medical waste:</u></p> <ol style="list-style-type: none"> 1. Incinerator facility available for biomedical waste at Central Hospital, Dhori. Mini incinerators installed for disposal of sanitary waste in 13 Community Toilets and 04 Public Toilets. 	Boundary wall work for SWM site is ongoing. Currently, waste segregation in practice is negligible in the ULB.


 09/02/24
 Executive Officer
 Phusro Nagar Parishad

झारखण्ड औद्योगिक क्षेत्र विकास प्राधिकार

बोकारो प्रक्षेत्र, बियाडा भवन, बालीडीह, बी०एस०सिटी०-14
दूरभाष संख्या-854225373, Gmail.mdbladabokaro@gmail.com

पत्रांक...148

दिनांक 05.03.2024

प्रेषक

विकास पदाधिकारी,
जियाडा, बोकारो प्रक्षेत्र।

सेवा में

उपायुक्त - सह - जिला दण्डाधिकारी,
बोकारो।

विषय :-

दिनांक - 24.02.2024 को उपायुक्त, बोकारो की अध्यक्षता में आयोजित जिला गंगा समिति (District Ganga Committee) की बैठक की कार्यावाही के संबंध में।

प्रसंग :-

भवदीय ज्ञापांक - 290/विधि दिनांक 27.02.2024

महाशय,

उपर्युक्त विषयक के सम्बंध में सादर सूचित करना है कि दिनांक 24.02.2024 को उपायुक्त, बोकारो के अध्यक्षता में आयोजित जिला गंगा समिति (District Ganga Committee) की बैठक की कार्यावाही में बियाडा बोकारो के अनुपालन से संबंधित प्रतिवेदन निम्नवत है -

Sl no.	Issues	BIADA
1	Industrial Towns- Pollution From Industrial effluents and Hazardous waste.	BIADA Now known as JIADA is not touching the Damodar River as such there is no pollution in Damodar River due to JIADA and no wastage is going in Damodar River
2	Some ETPs Non - Performance and Bypass into Drain.	BIADA Now known as JIADA is not touching the Damodar River as such there is no way to drain ETPs non-performance bye pass into drain. As such there is no chance of pollution in Damodar River due to JIADA and no wastage is going in Damodar River
3	Sewage Discharge (Mixed Drain/Kucha Drain Contamination)	BIADA Now known as JIADA is not touching the Damodar River as such there is no way to drain sewage (mixed drain / kucha drain contamination). As such there is no chance of pollution in Damodar River due to JIADA and no wastage is going in Damodar River

विश्वासभाजन

विकास पदाधिकारी,

जियाडा, बोकारो प्रक्षेत्र।

05.3.24

ANNEXURE - V



CENTRAL COALFIELDS LIMITED

A Miniratna Company
(Govt. of India Undertaking)

Kathara Area

Office of General Manager(KTA)
PO:Kathara, Distt: Bokaro(Jharkhand)
Email: gmkth.ccl@coalindia.in

Ref.No. GM/KTA/PS/25/23-24/359

Dated: 09.03.2024

Self Certificate

This is to certify that the water discharge from Mines and Washeries of the Kathara Area is within the permissible limit as per the environmental regulations and standards set forth by the governing authorities.

The water discharged from the mines undergoes a comprehensive treatment process, which includes the utilization of well-established **settling ponds, efficient Effluent Treatment Plants (ETP), and strategically designed water sumps.**

The water consumption of both washeries i.e Kathara washery and Sawang washery are 963.96 KLD and 547 KLD respectively and the both washeries are functioning on closed water circuit system.

To safeguard the Damodar River, we prioritize proper **settling and treatment** of discharges, preserving water quality. Concurrently, we establish a green barrier along the banks to mitigate erosion and promote biodiversity. Additionally, the toe wall constructed to prevent the direct run-off and soil erosion.

We are conducting regular assessments and monitoring of the water discharge from NABL laboratories for the Mines, Washeries and upstream and downstream of Damodar river in the Kathara Area, and the results indicate that the levels of pollutants and contaminants in the discharged water are well within the permissible limits specified by the relevant environmental regulations. **(Report Enclosed)**

[Signature]
General Manager,
Kathara Area 09/03/24

TEST REPORT

12/23 Test Report No. 1906	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **Kathara**
Stations:

Project: **Kathara OCP**
Date of Sampling: **25/11/2023**

1. Lagoon Discharge (Nov 2nd FN)
- 2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	0.61			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	20			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.54			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025/53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	0.02			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.023			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	0.50			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.66			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	21.2			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	1.4			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	46			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.006			0.005	5.0, Max	IS 3025/49: 1994, R: 2009, AAS (Air-Ac-Flame)

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

Analysed By

Authorized Signatory

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
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TEST REPORT

12/23 Test Report No. 1907	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Kathara
Stations:

Project: Kathara OCP
Date of Sampling:

1. Damodar U/S of Mine
2. Damodar D/S of Mine

09-10-2023
09-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.4	6.5			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.46	0.49			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	0.2	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	2.86	2.52			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.21	8.31			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ²⁻) mg/l	27	28			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	162	170			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	17	19			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1908	Job No. 094323120	Year	FY2023-24
Type of Sample:	Drinking Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	IS:10500 Drinking Water Standards, LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area :	Kathara	Project:	Kathara OCP
Stations:			Date of Sampling:
	1. Bandh Basti		09-10-2023
	2. Jhirki Basti		09-10-2023
	3. Asnapani Tola		09-10-2023
	4. Kathara Basti		09-10-2023

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l	<0.20	<0.20	<0.20	<0.20	0.20	0.5, Max	APHA, 23rd Edition Carmine Method, 2017
2	Cadmium (as Cd), mg/l	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003, Max	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l	25.6	22.4	28.8	22.4	1.60	75, Max	IS-3025/40:1991, EDTA
4	Chloride (as Cl ⁻), mg/l	6	6	6	6	2.00	250, Max	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02	<0.02	0.02	0.05, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F ⁻) mg/l	0.62	0.64	0.45	0.64	0.02	1.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l	<0.02	<0.02	<0.02	<0.02	0.02	0.2, Min	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l	<0.04	<0.04	<0.04	<0.04	0.04	0.3, Max	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	0.01, Max	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l	<0.01	<0.01	<0.01	<0.01	0.01	0.1, Max	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l	<0.003	<0.003	<0.003	<0.003	0.003	0.02, Max	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃ ⁻), mg/l	1.72	1.61	1.69	1.60	0.5	45, Max	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	8.31	8.2	8.2	8.36	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	0.001, Max	APHA, 23rd Edition, 4-Amino Antipyrine, 2017
16	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01, Max	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄ ²⁻) mg/l	39	40	59	41	2.00	200, Max	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (CaCO ₃), mg/l	84	76	84	76	4.00	200, Max	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l	<0.002	<0.002	<0.002	<0.002	0.002	0.01, Max	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l	<0.002	<0.002	<0.002	<0.002	0.002	0.05, Max	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l	159	152	192	152	25.00	500, Max	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l	96	92	104	80	4.00	200, Max	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU	<1	<1	<1	<1	1.0	1.0, Max	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l	0.005	0.142	0.029	0.135	0.005	5.0, Max	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

Analysed By

Authorized Signatory

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**ENVIRONMENTAL
STATEMENT**

OF

KATHARA WASHERY

FOR

2022-23

CENTRAL COALFIELDS LIMITED

EXECUTIVE SUMMARY

E-1 This Environmental Statement Report has been prepared as per gazette notification no. G.S.R. 329 (E) dated 13th March 1992 laid down by Ministry of Environment & Forest. The Environmental Audit has been subsequently renamed to "Environmental Statement" vide MOEF gazette notification no. G.S.R. 386 (E) dated 22nd April 1993.

E-2 The Kathara Washery project of Central Coalfields Limited (CCL) has been planned for 1.875 MTY of R.O.M coal input.

E-3 The quarterly environmental monitoring of Kathara Washery Project has been carried out regularly by CMPDI for air, water and noise parameters. The analysis results for the year 2022-23 are enclosed as Annexures.

The Environmental Monitoring is carried out as per the guide lines of Ministry of Environment & Forest (MOEF).

E-4 The concentration of, SO_x, NO_x and CO monitored for Kathara Washery is well within the prescribed limit. The concentration of SPM is also mostly within the permissible limits.

E-5 The noise level has been monitored at various points in the project and the same has been found to be within permissible limits. The Washery is functioning on closed water circuit system.

E-6 Hazardous waste is not being produced either from the production process or from any pollution control facilities.

E-7 This Annual Environmental Statement Report for Kathara Washery for the year 2022-23, has been presented in Form-V in this report.

CHAPTER -1**PROJECT DESCRIPTION****1.1 INTRODUCTION**

The Kathara Washery of Central Coalfields Limited was commissioned in the year 1970 with plant capacity of 1.875 MTY of raw coal. The washery has been designed for Kathara seam coal. The washery is receiving raw coal from Kathara OCP, Govindpur U/G, Tarmi and Charpri etc. The steel and Thermal power plants are the consumers of the washery. The washery is producing clean coal, middling and rejects, the latter two being the by-products from the washery.

1.2 LOCATION & COMMUNICATION :

The Kathara Washery is situated in the Bokaro District of Jharkhand State. The washery is easily accessible by rail and road. The Barkakana-Chandrapura Section of Eastern Central Railway passes by the side of the washery. The washery is approximately 8.50kms from Gomia Railway Station of Eastern Central railway. The Washery is also accessible by all weathered pucca road and is approximately 30 kms from Peterwar which is situated on NH-23(Ramgarh-Dhanbad Road)

1.3 PROCESS FLOWSHEET :

The flow diagram of Kathara Washery includes the following:

- ROM Coal from mines upto size 600 mm, received in receiving hopper.
- Raw coal is screened in the shaker screen for separating +80 mm and -80 mm coal.
- +80 mm coal is crushed in double roll crusher and blended with -80 mm size coal in 10,000 tes capacity blending bunker.
- This coal is further crushed in impact crusher and screened to bring to size 13-0.5 mm and -0.5 mm.
- Fines are then treated in the fine coal section and recovering the clean coal and middling.
- Slurry is treated in thickener and tailings are discharged into tailing ponds for further recovery of slurry.

The washery has been designed for only two products viz. clean coal and middling.

CHAPTER - II**ENVIRONMENTAL STATEMENT FORM -V****Environmental Statement for the financial year ending 31st March'2022****PART - A**

- (i) Name and Address of the mine. : KATHARA WASHERY PROJECT
 Place : Kathara
 Post : Kathara
 Dist. and state : Bokaro, JHARKHAND
- (ii) Industry Category : Primary
- (iii) Production Capacity : 1.875 MTY of R.O.M coal
- (iv) Date of last Env. Statement Report: The last Env. Statement Report was submitted by for the year 2019-2020

PART - B**WATER AND RAW MATERIAL CONSUMPTION****I. Water consumption (m³/ day)**

Sl.No.	Particulars	Water consumption
a	Industrial	598.17
b	Service building etc.	-
c	Domestic	365.79
d	Others	-
	TOTAL	963.96

WATER CONSUMPTION PER UNIT OF PRODUCT

Name of Product	Water Consumption per Unit of Product (coal)	
	During financial year (2022-23)	During financial year (2021-22)
Clean Coal	2.02 cum/tonne	2.58 cum/tonne

II.

RAW MATERIAL CONSUMPTION :

Sl.No.	Name of raw material	Consumption of raw material per Unit of Product (clean coal and washed coal)	
		During the financial year (2022-23)	During the financial year (2021-22)
1.	R.O.M Coal	1.097 Kg/tonne	1.171 Kg/tonne

PART - C**POLLUTION GENERATED
(PARAMETERS SPECIFIED IN THE CONSENT ISSUED)**

Nature of Pollutions	Quantity of pollution generated	Percentage variation from prescribed standards with reasons	
WATER	Discharge from washery into natural streams -Nil	The washery is functioning on closed water circuit system. The effluent after being treated into effluent treatment plant is recycled back for reuse.	Analysis report for the qtr ending -Mar 2023 is attached as Annexure-I.
AIR	It is difficult to quantify the amount of air pollutants in washery premises but the concentration of these are measurable and is given in Annexure.	The levels of suspended particulate matter (SPM), SO _x , NO _x have been found to be within prescribed standards. Therefore, the washery process has little impact on the nearby ambient air quality.	
NOISE	Noise level has been recorded and placed in Annexure	The noise level in the project is within the tolerance limits.	

PART – D**HAZARDOUS WASTES**

(As specified under Hazardous Waste/Management and Handling Rules, 1989)

Hazardous Wastes	Total quantity	
	During the financial year (2022-23)	During financial year (2021-22)
a) From process	Used oil- 300 Lts. Used Led Acid batteries-06 Nos Filter used – 06 Nos	Used oil-375 Lts. Used Led Acid batteries-07Nos Filter used – 07 Nos
b) From pollution control facilities	Nil	Nil

PART – F**PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF CONCENTRATION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE THE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES**

F.1 There is no hazardous waste produced either from washery operation or from any pollution control facilities.

F.2 The Kathra washery is essentially a two- product washery. It produces clean coal and middlings. However, due to deterioration in raw coal quality, some rejects are also being generated. In the year 2012-13, 83,000 tonnes of rejects were generated. The rejects generated from the beneficiation process is a part of the coal which contains carbonaceous shale and coal which has less carbon percentage. Rejects are collected and dispatched to dump area.

The physical and chemical analysis shows that the ash constitutes a major portion of the rejects. Ash is mainly refractory material and constitute mainly carbonaceous shale and silica. The fixed carbon is very less. The chemical composition of the rejects is such that leachate would not form heavy concentration of organic or inorganic pollutants.

F.3 Tailings from the process is collected in tailing ponds.

PART – G**IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF
NATURAL RESOURCES AND CONSEQUENTLY ON COST OF
PRODUCTION**

In order to carry out the washery operations in an eco-friendly manner, following pollution control measures have been implemented/are being implemented:-

1.0 AIR POLLUTION CONTROL MEASURES :

The following measures have been taken to control air pollution:

- (i) Totally enclosed system to prevent fugitive dust generation.
- (ii) Water sprinkling at every transfer point and receiving station.
- (iii) Dust is also collected mechanically and after mixing with water , it is used in the plant.
- (iv) Increase of massive 3-tier plantation is practiced.
- (v) Monitoring of Air quality parameters and its analysis is being done by CMPDI which is equipped NABL accredited laboratory.

2.0 WATER POLLUTION CONTROL MEASURES :

The following measures have been taken to control water pollution:

- (i) The washery effluent is being discharged into tailing ponds wherefrom the clarified water is being recycled back into washery process for re-use.

3.0 NOISE POLLUTION CONTROL MEASURES:

The washing plant at Kathara washery is in a totally enclosed system. Noise is minimized by using lubricants, cushion rollers, springs, proper covers and replacement of old conventional screens by USL screens. Rubber buffers, springs, Nylons etc are used to reduce vibration. The noise values are well within the prescribed limits.

4.0. DISPOSAL OF WASTE:

The rejects generated from the washery process is dumped outside. These rejects are also dispatched to power plants for power generation.

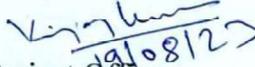
PART - H**ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION**

The following are the additional investment proposal for environmental protection:

- i. The regular environmental monitoring of air, water and noise pollutants of the project will be continued as per guidelines of MOEF&CC.
- ii. The scheme for effluent treatment prepared by CMPDI is under consideration.

PART - I**ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENTAL PROTECTION AND ABATEMENT OF POLLUTION**

1. The Environmental monitoring is carried out for the project by CMPDI as per the guide lines of the Ministry of Environment & Forest (MOEF). Ambient air quality, quality of effluent discharged from the mine, surface water and noise level all conform to the prescribed limits.
2. Suggestions made by different statutory agencies will be implemented from time to time in the project.
3. More afforestation work will be carried out.


19/08/22
Project Officer
Kathara Washery



Central Coalfields Limited
Office of the General Manager, B&K Area, Kargali
P.O: Bermo, Distt :Bokaro.



भारत सरकार
 THE GOVERNMENT OF INDIA

Ref. No.: GM(B&K)/Secy/23-24/ 180

Date:09/03/2024

To,
 The Deputy Commissioner,
 Bokaro, Jharkhand.

Subject: Information sought by District Ganga Committee.

Ref: Letter no. 290 dt 27.02.2024 from the Office of DC, Bokaro
 Letter no. 452 dt 29.02.2024 from the Office of RO,JSPCB, Dhanbad
 Meeting called on 09.03.2024 at DC Office, Bokaro

Dear Mam,

In reference to above mentioned letters and as discussed in the meeting on dt 09.03.2024 at your good office, the details are as follows:

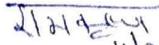
S. No.	Issue	Reply															
1.	Mine water Discharge	<p>Most of the mine water is being used for sprinkling purpose for dust suppression and for watering of plants and whatsoever water discharged out of mines, undergoes comprehensive treatment which passes through strategically designed mine sumps and settling tanks/ponds. Monitoring of the nearby water bodies and effluents from mines is being done by CMPDIL regularly and quarterly reports (copy attached) are being generated by its NABL accredited laboratories and are being submitted to JSPCB and MoEF&CC in Six monthly Compliances. Samples are being taken from following stations and their latest quarterly reports are attached herewith:</p> <table border="1"> <thead> <tr> <th>Mine</th> <th>Station</th> <th>Page no. of Report</th> </tr> </thead> <tbody> <tr> <td>Kargali OC</td> <td> <ul style="list-style-type: none"> • Baid karo nala before confluence with damodar • Damodar after conf. Of BK Nala • Raw water Damodar River, Kargali End </td> <td>B&K 9</td> </tr> <tr> <td>Bokaro OC</td> <td> <ul style="list-style-type: none"> • Goda Nala before Damodar • Damodar before Goda Nala • Damodar after Goda Nala </td> <td>B&K 17</td> </tr> <tr> <td>Karo Special</td> <td> <ul style="list-style-type: none"> • Bokaro River before Nala • Bokaro River after Nala </td> <td>B&K 29</td> </tr> <tr> <td>Konar Exp OCP</td> <td> <ul style="list-style-type: none"> • Upstream of Konar River • Downstream of Konar River • Goda nala D/S of Mine • Konar River in Confluence with Bokaro River </td> <td>B&K 42</td> </tr> </tbody> </table> <p>On the basis of above reports, it may be concluded that whatever water is discharged from the mines are being treated well and its parameters are within permissible limits.</p>	Mine	Station	Page no. of Report	Kargali OC	<ul style="list-style-type: none"> • Baid karo nala before confluence with damodar • Damodar after conf. Of BK Nala • Raw water Damodar River, Kargali End 	B&K 9	Bokaro OC	<ul style="list-style-type: none"> • Goda Nala before Damodar • Damodar before Goda Nala • Damodar after Goda Nala 	B&K 17	Karo Special	<ul style="list-style-type: none"> • Bokaro River before Nala • Bokaro River after Nala 	B&K 29	Konar Exp OCP	<ul style="list-style-type: none"> • Upstream of Konar River • Downstream of Konar River • Goda nala D/S of Mine • Konar River in Confluence with Bokaro River 	B&K 42
Mine	Station	Page no. of Report															
Kargali OC	<ul style="list-style-type: none"> • Baid karo nala before confluence with damodar • Damodar after conf. Of BK Nala • Raw water Damodar River, Kargali End 	B&K 9															
Bokaro OC	<ul style="list-style-type: none"> • Goda Nala before Damodar • Damodar before Goda Nala • Damodar after Goda Nala 	B&K 17															
Karo Special	<ul style="list-style-type: none"> • Bokaro River before Nala • Bokaro River after Nala 	B&K 29															
Konar Exp OCP	<ul style="list-style-type: none"> • Upstream of Konar River • Downstream of Konar River • Goda nala D/S of Mine • Konar River in Confluence with Bokaro River 	B&K 42															

2.	Coal Washeries- consumption of water and discharge of liquid effluents.	Currently no washery is active in B&K Area, CCL. The only Washery i.e. Kargali washery that exists, is closed since 2019 and is going to be dismantled soon as per company rules.
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All measures are being taken to prevent pollution of nearby rivers/water streams. This is for your kind information and perusal for onward submission.

Encl as above

Yours faithfully


11/02/24
General Manager
B&K Area

Copy to:

1. The RO, JSPCB, Dhnabad
2. The DMO, Bokaro
3. Office Copy



TC - 7470

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

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TEST REPORT

12/23 Test Report No. 1206	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Kargali OC Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	12	<2.00	8.06	35
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	8	<2.00	7.59	37
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	16	<2.00	7.56	31
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	20	<2.00	7.54	42
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	12	<2.00	7.62	33
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1207	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Kargali OCP

Stations: 1. Lagoon Discharge (Nov 2nd FN) Date of Sampling: 24/11/2023
2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF-SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2				
1	Ammonical Nitrogen, mg/l	1.03			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	16			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdo vanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.57			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025 /53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.015			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	20.31			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.54			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	19.9			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	40			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	<0.005			0.005	5.0, Max	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame) 1984

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1208	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Kargali OC
Stations:		Date of Sampling:	
	1. Baid Karo Nala before Damodar		09-10-2023
	2. Damodar after conf. Of BK Nala		09-10-2023
	3. Raw water Damodar River, Kargali End		09-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002		0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00		2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004		0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	8	6	6		2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02		0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.2	6.4	6		0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.72	0.51	0.54		0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01		0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04	<0.04		0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	0.50	0.50	14.18		0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.53	7.51	7.52		1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005		0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	42	27	68		2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	201	152	214		25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	21	14	22		10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005	<0.005		0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1214	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Bokaro OC Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	16	<2.00	8.11	26
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	12	<2.00	7.11	29
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	8	<2.00	7.52	30
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	8	<2.00	7.63	27
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	16	<2.00	7.55	31
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1215	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Bokaro OCP

Stations:

1. Lagoon Discharge (Nov 2nd FN)

Date of Sampling:

24/11/2023

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	1.34			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	12			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025/53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.012			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.16			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.58			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.3			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	33			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.337			0.005	5.0, Max	IS 3025/49: 1994, R : 2009, AAS (Air-Ac-Flame) 1984

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1216	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Bokaro OC

Stations:

Date of Sampling:

1. Goda Nala before Damodar
2. Damodar before Goda Nala
3. Damodar after Goda Nala

09-10-2023

09-10-2023

09-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002		0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00		2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004		0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6	6		2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02		0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.1	6.3	6.4		0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.75	0.56	0.54		0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01		0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04	<0.04		0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	4.34	1.94	1.26		0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.61	7.6	7.63		1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005		0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	45	45	38		2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	198	166	161		25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	19	24	29		10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	0.061	<0.005		0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1222	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Karo - I Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	12	<2.00	8.03	33
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	8	<2.00	7.58	36
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	12	<2.00	7.61	35
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	16	<2.00	7.6	38
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	12	<2.00	7.58	27
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1223	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Karo - I
Stations: Date of Sampling: 24/11/2023
1. Lagoon Discharge (Nov 2nd FN)

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	0.92			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	8			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025/53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.006			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.65			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.61			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.7			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	2.8			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	29			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.066			0.005	5.0, Max	IS 3025/49: 1994, R: 2009, AAS (Air-Ac-Flame)

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1228	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Karo Special
Stations:		Date of Sampling:	
	1. Bokaro River before Nala		10-10-2023
	2. Bokaro River after Nala		10-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.5	6.6			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.45	0.48			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	0.50	0.50			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.62	7.61			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ²⁻) mg/l	27	44			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	134	137			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	32	41			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1239	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane. Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Konar Expansion OCP Stations: Lagoon Konar OCP

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	10/10/23	16/10/23	16/10/23-31/10/23	8	<2.00	7.98	39
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	12	<2.00	7.55	41
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	12	<2.00	7.6	33
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	12	<2.00	7.58	32
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	16	<2.00	7.64	38
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1240	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Konar OCP Exption

Stations:

Date of Sampling:

1. Lagoon Konar OCP (Nov 2nd FN)

24/11/2023

2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	1.22			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	16			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025 /53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	<0.003			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.20			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.64			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.4			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	35			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.013			0.005	5.0, Max	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1241	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Konar Expansion OCP
Stations:			Date of Sampling:
	1. Upstream of Konar River		10-10-2023
	2. Downstream of Konar River		10-10-2023
	3. Goda nala D/S of Mine		10-10-2023
	4. Konar River in Confluence with Bokaro River		10-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00	<2.00	2.00	IS 3025/44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6	8	6	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.6	6.7	6.2	6.4	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.46	0.44	0.74	0.44	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	0.07	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	1.87	2.20	8.35	2.15	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.61	7.6	7.62	7.7	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	21	21	67	22	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	142	135	232	131	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	27	22	18	27	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005	<0.005	<0.005	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1206	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Kargali OC Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	12	<2.00	8.06	35
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	8	<2.00	7.59	37
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	16	<2.00	7.56	31
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	20	<2.00	7.54	42
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	12	<2.00	7.62	33
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

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TEST REPORT

12/23 Test Report No. 1207	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Kargali OCP

Stations:

1. Lagoon Discharge (Nov 2nd FN)
- 2.

Date of Sampling:

24/11/2023

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF-SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2				
1	Ammonical Nitrogen, mg/l	1.03			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	16			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdo vanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.57			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025 /53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.015			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	20.31			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.54			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	19.9			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	40			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	<0.005			0.005	5.0, Max	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame) 1984

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1208	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Kargali OC
Stations:		Date of Sampling:	
	1. Baid Karo Nala before Damodar		09-10-2023
	2. Damodar after conf. Of BK Nala		09-10-2023
	3. Raw water Damodar River, Kargali End		09-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002		0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00		2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004		0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	8	6	6		2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02		0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.2	6.4	6		0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.72	0.51	0.54		0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01		0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04	<0.04		0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	0.50	0.50	14.18		0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.53	7.51	7.52		1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005		0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	42	27	68		2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	201	152	214		25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	21	14	22		10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005	<0.005		0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1214	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Bokaro OC Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	16	<2.00	8.11	26
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	12	<2.00	7.11	29
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	8	<2.00	7.52	30
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	8	<2.00	7.63	27
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	16	<2.00	7.55	31
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1215	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Bokaro OCP

Stations:

1. Lagoon Discharge (Nov 2nd FN)

Date of Sampling:

24/11/2023

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	1.34			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	12			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025 /53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.012			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.16			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.58			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.3			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	33			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.337			0.005	5.0, Max	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame) 1984

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

TEST REPORT

12/23 Test Report No. 1216	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Bokaro OC
Stations:		Date of Sampling:	
	1. Goda Nala before Damodar		09-10-2023
	2. Damodar before Goda Nala		09-10-2023
	3. Damodar after Goda Nala		09-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002		0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00		2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004		0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6	6		2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02		0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.1	6.3	6.4		0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.75	0.56	0.54		0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01		0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04	<0.04		0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	4.34	1.94	1.26		0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.61	7.6	7.63		1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001		0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005		0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	45	45	38		2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	198	166	161		25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	19	24	29		10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	0.061	<0.005		0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1222	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Karo - I Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	09/10/23	16/10/23	16/10/23-31/10/23	12	<2.00	8.03	33
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	8	<2.00	7.58	36
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	12	<2.00	7.61	35
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	16	<2.00	7.6	38
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	12	<2.00	7.58	27
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/23 Test Report No. 1223	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Karo - I
Stations: Date of Sampling: 24/11/2023

1. Lagoon Discharge (Nov 2nd FN)

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	0.92			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2 , Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0 , Max	IS 3025 /44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	8			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0 , Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0 , Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0 , Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0 , Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0 , Max	IS 3025 /53: 2003, R : 2009 , AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0 , Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	0.006			0.003	3.0 , Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.65			0.50	10.0 , Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.61			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0 , Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0 , Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.7			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0 , Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	2.8			1.00	100.0 , Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0 , Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	29			10.00	100.0 , Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.066			0.005	5.0 , Max	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TC - 7470

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

cmpdi
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TEST REPORT

12/23 Test Report No. 1228	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Karo Special
Stations:		Date of Sampling:	
	1. Bokaro River before Nala		10-10-2023
	2. Bokaro River after Nala		10-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.5	6.6			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.45	0.48			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	0.50	0.50			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.62	7.61			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ²⁻) mg/l	27	44			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	134	137			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	32	41			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/23 Test Report No. 1239	Job No. 094323120	Year	FY2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane. Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : B&K Project: Konar Expansion OCP Stations: Lagoon Konar OCP

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-23 1st FN	10/10/23	16/10/23	16/10/23-31/10/23	8	<2.00	7.98	39
Oct-23 2nd FN	25/10/23	01/11/23	01/11/23-15/11/23	12	<2.00	7.55	41
Nov-23 3rd FN	08/11/23	16/11/23	16/11/23-30/11/23	12	<2.00	7.6	33
Dec-23 5th FN	08/12/23	18/12/23	18/12/23-29/12/23	12	<2.00	7.58	32
Dec-23 6th FN	30/12/23	01/01/24	01/01/24-15/01/24	16	<2.00	7.64	38
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

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TEST REPORT

12/23 Test Report No. 1240	Job No. 094323120	Year	2023-24
Type of Sample:	Effluent Water	Quarter Ending	Dec. '23
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/23
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/23-08/01/24
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :

B&K

Project:

Konar OCP Exption

Stations:

Date of Sampling:

1. Lagoon Konar OCP (Nov 2nd FN)

24/11/2023

2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l	1.22			0.02	50.0, Max	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l	<0.002			0.002	0.2, Max	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l	<2.00			2.00	30.0, Max	IS 3025/44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l	<0.0004			0.0004	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l	16			4.00	250.0, Max	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l	<0.02			0.02	3.0, Max	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate (as PO ₄ ³⁻) mg/l	<0.30			0.30	5.0, Max	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F ⁻) mg/l	0.55			0.02	2.0, Max	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l	<0.02			0.02	5.0, Max	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium (as Cr ⁺⁶), mg/l	<0.01			0.01	0.1, Max	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l	<0.04			0.04	3.0, Max	IS 3025 /53: 2003, R : 2009, AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l	<0.001			0.001	0.1, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l	<0.01			0.01	2.0, Max	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l	<0.003			0.003	3.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen (as NO ₃ -N) mg/l	21.20			0.50	10.0, Max	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l	<2.00			2.00	10.0, Max	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.64			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l	<0.001			0.001	1.0, Max	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l	<0.0005			0.0005	0.05, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ²⁻), mg/l	<0.005			0.005	2.0, Max	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	20.4			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l	<0.002			<0.002	2.0, Max	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l	4.2			1.00	100.0, Max	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l	<0.02			0.02	1.0, Max	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l	35			10.00	100.0, Max	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l	0.013			0.005	5.0, Max	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

*The Environment (Protection)Rule,1986, Schedule-VI (General Standards for Discharge of Environmental Pollutants Part-A: Effluent)

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TEST REPORT

12/23 Test Report No. 1241	Job No. 094323120	Year	FY2023-24
Type of Sample:	Surface Water	Quarter Ending	Dec-23
Customer	CCL	Date of Receipt:	16-10-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.23-16.12.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	B&K	Project:	Konar Expansion OCP
Stations:			Date of Sampling:
	1. Upstream of Konar River		10-10-2023
	2. Downstream of Konar River		10-10-2023
	3. Goda nala D/S of Mine		10-10-2023
	4. Konar River in Confluence with Bokaro River		10-10-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l	<2.00	<2.00	<2.00	<2.00	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl ⁻), mg/l	6	6	8	6	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Disolved Oxygen	6.6	6.7	6.2	6.4	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F ⁻) mg/l	0.46	0.44	0.74	0.44	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l	<0.04	0.07	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃ ⁻), mg/l	1.87	2.20	8.35	2.15	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.61	7.6	7.62	7.7	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄ ⁻²) mg/l	21	21	67	22	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l	142	135	232	131	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l	27	22	18	27	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l	<0.005	<0.005	<0.005	<0.005	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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BHARAT COKING COAL LIMITED

(A Mini Ratna Company)
(A Subsidiary of coal India Limited)
Regd. off: KoylaBhawan, Koyla Nagar,
CIN: U10101JH1972GOI000918

Office of the Project Officer
Damoda Colliery, Barora Area, BCCL

Ref No: - DC/AR-1/PO/2024/ 22C

Date: - 05.03.2024

सेवा में,
क्षेत्रीय पदाधिकारी
धनबाद

(महाप्रबंधक, बरोरा क्षेत्र के माध्यम से)

विषय- जिला गंगा समिति की दिनांक 24.02.2024 को संपन्न बैठक में दिए गए निर्देश के आलोक में अद्यतन प्रतिवेदन उपलब्ध कराने के सम्बन्ध में।

महाशय,

उपर्युक्त विषय एवं दामोदा कोलियरी (क्लस्टर-1), बरोरा क्षेत्र में सम्बन्ध में आपको सादर सूचित करना चाहता हूँ कि वर्तमान में दामोदा परियोजना में केवल एक ही पैच पर उत्खनन कार्य चल रहा है एवं माइन वाटर को माइन में जल छिडकाव, पौधों को पानी देने एवं दामोदा में स्थित दो प्रेशर फ़िल्टर में ट्रीटमेंट के पश्चात कॉलोनी एवं ग्राम में सप्लाई की जाती है।

आपके सूचनार्थ प्रेषित।
धन्यवाद

Senhs.
05.3.24
परियोजना पदाधिकारी
दामोदा कोलियरी

प्रतिलिपि-

1. महाप्रबंधक (पर्या.), कोयला भवन (ईमेल के माध्यम से)
2. कार्यालय प्रतिलिपी

33070

ANNEXURE - VIII

कार्यालय, कारखाना निरीक्षक, बोकारो अंचल - 1, बोकारो I

पत्रांक: 15

प्रेषक,

शिवानन्द लागुरी
कारखाना निरीक्षक,
बोकारो अंचल- 1, बोकारो I

सेवा में,

प्रभारी पदाधिकारी,
विधि शाखा, बोकारो I

बोकारो, दिनांक: 11.03.2024

विशय: माननीय एन.जी.टी, नई दिल्ली के O A No. 200/2014 में दिनांक: 20/02/2024 को पारित आदेश के अनुपालन में प्रतिवेदन देने के संबंध में I

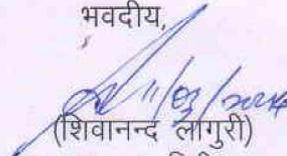
प्रसंग: आपके कार्यालय पत्रांक 360 दिनांक 07.03.2024

महाशय,

उपरोक्त विषय के संबंध में माँगी गई वांछित विवरणी इस पत्र के साथ संलग्न कर प्रेषित की जा रही है I

अनुलग्नक: यथोक्त

भवदीय,


(शिवानन्द लागुरी)
कारखाना निरीक्षक
बोकारो अंचल- 1, बोकारो

**REPORT FROM OFFICE OF THE INSPECTOR OF FACTORIES,
BOKARO CIRCLE- 1 AND 2, BOKARO.**

INDUSTRIAL PROFILE OF DAMODER RIVER BASIN

DISTRICT	INDUSTRIES	STATUS/ISSUES	CONCERNED DEPARTMENT
BOKARO	BOKARO STEEL PLANT	DISCHARGE INTO GANGA RIVER(BSP) EC IMPOSED	<ol style="list-style-type: none"> Updated factory profile: SAIL/Bokaro Steel Plant is operating with Environment Clearance for 5.77 MTPA Hot Metal and 5.006 MTPA Crude Steel. We are also operating with valid Consent to Operate. Management of Solid and Liquid waste: Bokaro Steel Plant has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. Bokaro Steel plant has also installed two effluent treatments Plant of 1500 m³/Hr. capacity each for proper treatment of effluent/storm water. (i) Most of the current arisings are either being utilized inside the Plant or sold in the secondary Market. No Solid waste is incinerated inside the Plant. ii) For Chemical treatment of liquid waste, Bokaro Steel Plant has installed two Effluent treatment Plant of 1500 m³/Hr capacity each at Outfall-1 and Outfall-2. For Chemical and bio-logical treatment of Liquid waste, Bokaro Steel Plant is having Biological Oxidation and Dephenolization Plant at Coke Oven. iii) Bokaro Steel Plant has installed Pollution control Equipment at various shops and material Handling points including scrubbers, cyclones separators, Bag Filters, GCP and Electro Static Precipitators to restrict emission. Most of the current arisings are either being utilized in the process or sold in the secondary Market, however there are certain legacy dumps of BF Slag & LD Slag, which is 5-7 Km away from the Damodar and will be used for Area Development in the upcoming expansion-cum-Modernization of BSL.
	BTPS		<ol style="list-style-type: none"> DRY FLY ASH IS COLLECTED IN TWO NO. OF SILOS OF CAPACITY 2X1200 MT SOLD TO M/S B. K. MAHTO POND ASH IS BEING UTILIZED IN FILLING LOW LYING AREAS IN KHUTRI NEAR JENAMORE, JIADA/BIADA AND NHAI
	TTPS		<ol style="list-style-type: none"> Updated factory profile: M/s. Tenughat Vidyut Nigam Ltd (TVNL) is established in 1987. TVNL Power Plant is located in left bank of Tenughat Reservoir which is built in Damoder River with aggregate installed capacity to generate 420 MW having 2x210 MW. Management of Solid waste: TTPS- FLY ASH IS POURED INTO ASH POND THROUGH ASH PIPELINES, THIS ASH HAS BEEN USED FOR FILLING LOW LAND AREAS OF TTPS AND AFTER FILLING IT IS COVERED WITH SOIL. ONE SILO IS INSTALLED FOR DRY FLY ASH AND ANOTHER SILO IS IN FINAL STAGE OF TESTING/COMMISSIONING. WORK ORDER FOR COLLECTION AND DISPOSAL OF DRY FLY ASH FROM SILO HAS ALREADY BEEN PLACED. Management of Liquid waste: ETP IS UNDER CONTRUCTION, STP IS UNDER PROCESS OF INSTALLATION.
	CTPS		<ol style="list-style-type: none"> Updated factory profile: M/s. Chandrapura Thermal Power Station, DVC has two running units namely u # 7 & 8 and each having 250 MW generating capacity Management of Solid waste: <ol style="list-style-type: none"> Generation of Fly Ash: 2300-2500 MT on daily basis. POWER PLANT FLY ASH- SOLD TO M/S ACC LT, SINDRI AND m/s Dalmia cement, Bokaro. Silo installed. Rest Fly ash to Ash Pond through running Slurry which is evacuated by Hyva on daily basis for utilization of filling Mines and NHAI use.
	BPSCL		<ol style="list-style-type: none"> Updated factory profile: M/s. Bokaro Power Supply Company Pvt. Ltd. (BPSCL) is established in 2001 as a Joint Venture Company of Steel

		<p>Authority of India Ltd.(SAIL) and Damodar Valley Corporation (DVC) and is engaged in power and steam generation for supply to SAIL Bokaro Steel Plant (BSL) located at Bokaro for meeting their process requirement . BPSCL Power Plant is located in the premises of Bokaro Steel Plant (BSL) with aggregate installed capacity to generate 338MW of power and 2180 Tonne per Hour (TPH) of steam.</p> <p>2. List of waste and effluents (gas, liquid and solid) generated during manufacturing process.</p> <table border="1"> <thead> <tr> <th>1. Quantity of solid and liquid wastes generated per day: Sl. No.</th> <th>Types of waste</th> <th>State of waste</th> <th>Qty. of waste (Approx.)</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Ash</td> <td>Solid</td> <td>1255</td> <td>MT/day</td> </tr> <tr> <td>2</td> <td>Effluent</td> <td>Liquid</td> <td>1200</td> <td>Cum/Day</td> </tr> <tr> <td>3</td> <td>Used Transformer Oil</td> <td>Liquid</td> <td>34</td> <td>KL/year</td> </tr> <tr> <td>4</td> <td>Used Industrial Oil</td> <td>Liquid</td> <td>40</td> <td>KL /year</td> </tr> </tbody> </table> <p>3. Effective arrangement</p> <p>1. Method of incineration of solid waste: No incineration is carried out in BPSCL plant.</p> <p>2. Chemical and Biological treatment of water waste: Chemical treatment is done in water treatment plant before release of effluent to BSL Network. Test reports are within limits. Report attached. (Annexure III)</p> <p>3. Provision of scrubber, cyclone separator electrostatic precipitator etc.: All the boilers are equipped with electrostatic precipitator and the test report of flue gas is attached (Annexure II). SPM values are within limits.</p> <p>4. What effective arrangements has made in your factory to render them innocuous and for their disposal: The effective arrangements are as follows- Pollutant</p> <table border="1"> <thead> <tr> <th></th> <th>Effective Arrangement</th> </tr> </thead> <tbody> <tr> <td>FLUE GAS EMISSION</td> <td> a) All Boilers in Power Plant are provided with Electrostatic Precipitators (ESPs) to restrict Stack Emission. b) Stack Emission parameters are within the prescribed limit of 100 PPM for old Boilers and 50 PPM for New Boiler (Unit #9only). c) Round the clock surveillance, Monitoring & maintenance of ESPs are done to maintain the prescribed norms. d) Online stack emission monitoring system has been installed. Online Monitoring is done on real-time basis and transmitted to CPCB & JSPCB. </td> </tr> <tr> <td>HAZARDOUS WASTE</td> <td> a) Used industrial oil & Transformer oil are auctioned to authorized recyclers of Pollution Control Boards. b) Used Batteries are disposed off through buy back arrangement. </td> </tr> <tr> <td>DRY FLY ASH/POND ASH</td> <td> 1. Utilisation of Pond Ash · Fly ash is sent to ash pond and used in road construction activities/back filling of low lying areas. · MOU has been signed with NHAI for utilization of Pond ash · Pond ash has been utilized for backfilling of low lying areas of BSL. 2. Utilization of Dry Ash · We have been supplying fly ash to M/s. Dalmia Cement as per their requirement. · Arrangement has been made for fly ash bagging and transportation through railway wagon to end users. · Regular rakes of Ash is sent through rail mode to Bangladesh · Fly ash brick manufacturing machines are installed for in-house brick manufacturing for internal use of BPSCL & BS </td> </tr> </tbody> </table>	1. Quantity of solid and liquid wastes generated per day: Sl. No.	Types of waste	State of waste	Qty. of waste (Approx.)	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			<ul style="list-style-type: none"> · Dry fly ash is also supplied to local ash brick manufacturers through road mode.
			<p>Effluent Water</p> <p>a) Effluent water produced during process is 1200 m3/day which is treated in neutralizing pit of WTP and sent to BSL network of Zero liquid discharge system and no industrial effluent is discharged to outside water body.</p> <p>b) Water sent along with ash slurry to ash pond is recovered after settlement of ash and is taken back to cooling pond for reuse and no discharge is done to outside water bodies.</p> <p>c) On-line Effluent Monitoring System has been installed. Real time data transmission is being done through NEVCO server to JSPCB & CPCB. The parameters being monitored are PH, COD, BOD and TSS.</p>
			<p>Place of dumping industrial waste and distance of such place from any stream/river:</p> <p>The ash pond area is located at a distance of more than 5Km from nearest river.</p>
	KATHARA TPP		Production/ Manufacturing process is not going on.
	SAIL SRU		REPORT NOT RECEIVED
	ESL		<p>Management of Solid waste:</p> <ol style="list-style-type: none"> 1. POWER PLANT FLY ASH- SOLD TO M/S DALMIA CEMENT LTD. 2. DRY FLY ASH- M/S N. R. CONSTRUCTION PVT.LTD., M/S AADISHAN INDUSTRIES, M/S ECO INDUSTRIES, M/S ACC LIMITED 3. BED ASH- SOLD TO M/S SHAGAN COMMERCIALS (ON BEHALF OF TATA STEEL) <p>Management of Liquid waste:</p> <ol style="list-style-type: none"> 1. STP (Sewage Treatment Plant installed and working) 2. ETP (Effluent Treatment Plant Installed and working)

KEY POLLUTION ISSUE

SL. NO.	ISSUES	CONCERN DEPARTMENT WHO HAS TO SUBMIT REPORT
2	INDUSTRIAL POLLUTION-IN BOKARO	M/S DUGDA COAL WASHRY- The Dugda Coal Washery has been designed to operate on a 'closed-circuit system': thus, ensuring Zero Liquid/Effluent Discharge from the washery premises. However, the Dugda Coal Washery has not been in operation since May'21.
8	DISPOSAL OF FLY ASH FROM TPP	<ol style="list-style-type: none"> 1. TTPS- FLY ASH IS POURED INTO ASH POND THROUGH ASH PIPELINES, THIS ASH HAS BEEN USED FOR FILLING LOW LAND AREAS OF TTPS AND AFTER FILLING IT IS COVERED WITH SOIL. ONE SILO IS INSTALLED FOR DRY FLY ASH AND ANOTHER SILO IS IN FINAL STAGE OF TESTING/COMMISSIONING. WORK ORDER FOR COLLECTION AND DISPOSAL OF DRY FLY ASH FROM SILO HAS ALREADY BEEN PLACED. ETP IS UNDER CONSTRUCTION. STP IS UNDER PROCESS OF INSTALLATION. 2. BPSCL- 1. Utilisation of Pond Ash <ul style="list-style-type: none"> · Fly ash is sent to ash pond and used in road construction activities/back filling of low lying areas. · MOU has been signed with NHAI for utilization of Pond ash. · Pond ash has been utilized for backfilling of low lying areas of BSL. <p>2. Utilization of Dry Ash</p> <ul style="list-style-type: none"> · We have been supplying fly ash to M/s. Dalmia Cement as per their requirement. · Arrangement has been made for fly ash bagging and transportation through railway wagon to end users. · Regular rakes of Ash is sent through rail mode to Bangladesh

		<p>· Fly ash brick manufacturing machines are installed for in-house brick manufacturing for internal use of BPSCL & BSL.</p> <p>· Dry fly ash is also supplied to local ash brick manufacturers through road mode.</p> <p>4. ESL- POWER PLANT FLY ASH- SOLD TO M/S DALMIA CEMENT LTD. DRY FLY ASH- M/S N. R. CONSTRUCTION PVT.LTD., M/S AADISHAN INDUSTRIES, M/S ECO INDUSTRIES, M/S ACC LIMITED BED ASH- SOLD TO M/S SHAGAN COMMERCIALS (ON BEHALF OF TATA STEEL)</p> <p>5. CTPS- Generation of Fly Ash: 2300-2500 MT on daily basis. POWER PLANT FLY ASH- SOLD TO M/S ACC LT, SINDRI AND m/S Dalmia cement, Bokaro. Silo installed. Rest Fly ash to Ash Pond through running Slurry which is evacuated by Hyva on daily basis for utilization of filling Mines and NHAI use.</p> <p>4. BTPS- DRY FLY ASH IS COLLECTED IN TWO NO. OF SILOS OF CAPACITY 2X1200 MT SOLD TO M/S B. K. MAHTO POND ASH IS BEING UTILIZED IN FILLING LOW LYING AREAS IN KHUTRI NEAR JENAMORE, JIADA/BIADA AND NHAI ASH WATER RECIRCULATION SYSTEM IS INSTALLED STP IS UNDER PROCESS</p>
9	<p>OVER BURDEN (OB) OF MINES, REJECT OF COAL WASHRIES AND ASH OF THERMAL POWER PLANT ARE KEPT EITHER ON THE RIVER BED OR NEAR THE RIVER, WHICH SOONER OR LATER GO TO THE RIVER. FURTHER, THE 11 SEWAGES OF TOWNS, TOWNSHIPS AND SUBURBS FINDS WAY TO DOWNSTREAM THROUGH SEPTIC TANKS AND SOAK PITS.</p>	<p>1. ESL- NO OB OF MINES, ASH FROM CAPTIVE POWER PLANT IS KEPT IN SILOS AND SOLD TO FLY ASH BRICK MANUFACTURER AND CEMENT INDUSTRIES.</p> <p>2. CTPS- THERE IS NO OVER BURDEN OF MINES. ASH POND IS SUFFICIENTLY DISTANCE FROM RIVER BANK.</p> <p>3. BTPS- FLY ASH IS BEING DISPOSED IN CONFINED ASH PONDS. CLEAR WATER IS RECIRCULATED FOR REUSE FOR MAKING ASH SLURRY. DISTANCE BETWEEN ASH POND AND RIVER IS APPROX 07 KM.</p> <p>4. BSL- BSL is having a well-laid procedure for proper utilization and disposal of Solid waste. All the Hazardous waste being generated in the BSL is either used internally inside the Plant or sold to authorized Hazardous Waste recyclers and the rest material is sent to the Secured land fill (Hazardous Waste Pit). For proper treatment of liquid waste, Bokaro Steel Plant has been designed with a central re-circulation system where any effluent discharged from various shops are first treated locally in the shop and then recycled back through Sludge compartment (for settlement) and Cooling Ponds (close circuit) for reuse of water in the process. Bokaro Steel plant has also installed two effluent treatments Plant of 1500 m3/Hr. capacity each for proper treatment of effluent/storm water. Most of the current arisings are either being utilized in the process or sold in the secondary Market, however there are certain legacy dumps of BF Slag & LD Slag, which is 5-7 Km away from the Damodar and will be used for Area Development in the upcoming expansion-cum-Modernization of BSL.</p>



33075 TENUGHAT THERMAL POWER STATION

Tenughat Vidyut Nigam Limited
(A GOVT. OF JHARKHAND UNDERTAKING)

P.O.: TTPS, Lalpania, Distt. Bokaro.

Letter No. : ...4.2.5...

Date: ..07.03.2024

From,

ESE (HR),
TTPS, Lalpania, Bokaro.

To,

Deputy Commissioner,
Bokaro.

Sub: Report on issues raised by NGT in its order dated 18.09.2023 and its compliance to be given by Thermal Power Plant as per MoM dated 27.02.2024 circulated vide letter as referred below.

Ref : Your Letter No - 290 dated 27.02.2024.

Sir,

With reference to above, following are the submissions in context of measures taken by our plant Tenughat Thermal Power Station (2x210MW), Lalpania for managing fly ash disposal work and industrial pollution :-

- 1. Ash disposal from Ash pond:-** Fly ash is poured into the ash pond through ash pipelines connected from our Ash Handling Plant to Ash pond. This system is in service since inception of the plant. Disposal of settled ash from ash pond is done on regular basis. This ash has been used for filling low land areas in TTPS land. After filling of ash, the filled areas have been covered with soil and compacted properly. Later on, green belt has been developed over it by planting grasses and trees. More than 100% of ash utilization has been achieved in last five years.
- 2. Isolation of ash pond from Water Body:-** Ash dykes have been made all around the ash pond for isolating the pond from water body. Proper supervision and maintenance of dykes is done on regular basis for maintaining its strength and stability. Enough grasses and tree plantations have been done all around the dyke and other available areas in the dyke premises for stopping erosion and holding the soil. PCC work has also been done at several places along the dyke for proper strengthening.
- 3. Disposal of fly ash through Silo System:-** We have installed dry fly ash disposal Silo System connected to both the units (Unit-1 & Unit-2) of power plant for disposal of dry fly ash from ESP Hoppers. Silo System for one unit has already been commissioned and has come in operation. Silo System for other unit is in final stage of testing/commissioning and shall be started in one month. Though above system, we are now able to collect and transport dry fly ash and dispose for commercial use. As such, we can now prevent more than 80% of fly ash from sending to ash pond. Work order for collection and disposal of dry fly ash from Silo has already been placed to two agencies. Several other agencies are approaching us for dry fly ash from Silo for using in cement plant, bricks plant and other purposes.

4. **Ash disposal through Rail racks:-** We have developed ash disposal yard for transportation of ash through rail racks. Several agencies have been requested for lifting of pond ash/fly ash and transporting through rail racks. Two racks of ash (one rack pond ash and one rack fly ash) have already been transported through rail rack from our plant through agencies in April 2023 and July 2023.
5. **Supply of pond ash/fly ash to local vendors for ash bricks/paver blocks plants:-** Order has also been placed to local ash bricks manufacturing agencies from Ranchi and Hazaribagh for lifting of pond ash/fly ash for manufacturing of ash bricks and paver blocks. Pond ash lifting work through one of the above agencies is in process for last two years. Other one, that has been recently ordered, is in process of lifting the fly ash from our Silo System.
6. **Disposal/Transportation of pond ash in construction of Highways as per proposal from NHAI:** - The above proposal is under consideration at under HQ. After finalization, we would be able to send our pond ash in construction of NHAI. Reportedly, a NHAI highway project is to be constructed at above 20-25 KM from our plant.
7. **Installation of AWRS (Ash Water Recirculation System) at TTPS:-** Final order for installation of above system at TTPS is going to be placed shortly as same has been passed by our board of Directors recently. Through above system, we shall be able to achieve Zero Liquid Discharge (ZLD) in respect of ash water.
8. **Installation of ETP (Effluent Treatment Plant) at TTPS :-** Above system is already in process of installation at TTPS. Civil work of tank area is in final stage of completion. Laying of pipelines in plant area and installation of equipments will be started shortly. Through above system all the effluent discharged lines of plant area shall be terminated in collection tank at ETP site area. The collected effluent would be treated in ETP and would be reused in plant area. By this process, we will be able to achieve Zero Liquid Discharge (ZLD) in respect of effluents in plant area.
9. **Installation of STP (Sewerage Treatment Plant) at TTPS :-** Above system is in process of installation in our colony area. All sewerage lines of colony area would be terminated in the collection tank of STP. The treated and clean water would be available for use in gardening and other purposes. By this process, we will be able to achieve Zero Liquid Discharge (ZLD) in respect of sewerage treatment in colony area.

All above measures shall contribute in the compliance of the points raised by NGT for management of fly ash and management of pollution with industrial and domestic effluent.

Yours Faithfully,


07/03/24
ESE (HR),

TTPS, Lalpania, Bokaro

33077

बोकारो पावर सप्लाय कम्पनी (प्रा.) लिमिटेड
(सेल एवं डी.वी.सी. का एक संयुक्त उपक्रम)
हॉल सं.-एम-01, पुराना प्रशासनिक भवन,
इस्पत भवन, बोकारो स्टील सिटी-827001
दूरभाष : 06542-223747 (का. एवं प्र.) 240380 (क्र. एवं सं.)
फैक्स : 06542-247062, 246101 (पावर प्लांट)

ओ पा भ क लि
B P S C L

CIN : U40300DL2001PTC112074

Bokaro Power Supply Company (P) Ltd.
(A Joint Venture of SAIL & DVC)
Hall No. M-01, Old ADM Building,
Ispat Bhawan, Bokaro Steel City - 827001
Tel : 06542-223747 (P&A), 240380 (P&C)
Fax : 06542-247062, 246101 (Power Plant)

To

Shri Jitendra Prasad Singh
Regional Officer
Jharkhand State Pollution Control Board
Dhanbad



Date:-06.03.2024

Ref: - Your letter no.-452 dtd. -29.02.2024

Sub: -जिला गंगा समिति की दिनांक: 24.02.2024 को सम्पन्न बैठक में दिए गएनिर्देश के आलोक के उद्दनप्रतिवेदन उपलब्ध करने के सम्बन्ध में.

Sir,

With refer to the above, we would like to inform you the following.

- Effluent from the plant of BPSCL is discharged into the zero-discharge plant of BSL and all of the effluent is taken back into the Cooling Pond (water intake reservoir) of BSL for the internal use of Plant. Hence, no effluent is discharged to any outside water body. Moreover, the parameters recommended for effluent in a Power Plant are being checked on regular basis and are within norms (test report attached).
- BPSCL has no separate colony for its employees and we use the same facility as that of BSL.
- Ash pond of BPSCL is located at a distance of more than 05 km from nearest river i.e. Garga. Also, the newly produced Ash is being effectively utilized in NHAI projects and filling up of low-lying areas within plant premises. The dry fly ash is also being utilized in cement industries and is also being sent to Bangladesh after bagging via rail mode. Also, the old ash dump has been bio-stabilized. Surface & tube well water of areas surrounding ash pond are checked on quarterly basis and the parameters are well within the permissible limits (Test report attached).

This is for your necessary information.

Thanking you and assuring you of our co-operation in providing all the necessary information as required by your kind office.

For & on behalf of BPSCL

A.K. Das

CGM/MM,CED& Env.

06.03.2024



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS
(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Fax : 33 2248-0447

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007



TC-12347

TEST REPORT

No. E(D)/23-24/1552

Date: 22 January 2024

Page 1 of 1

Issued to : M/s. BOKARO POWER SUPPLY COMPANY (P) LTD.
Bokaro Steel City, Bokaro, Jharkhand

Your Ref. No. : BPSCL/MM/22-23/C-003/LTE-010/50183/2398 dtd. 16.09.2022

Description of Sample : Effluent

Collection Source : WCTP Outlet

Sample Drawn by us on : 17.01.2024, 2023 at 4.00 P.M.

Sample Carried out by : Mr. S. Mondal and Mr. B. Manna

Sampling Plan : RVB/FM/44

Analysis completed on : 22.01.2024

Sample collection Procedure : IS : 3025 (Part -I) - 1987

Mode of Sampling : Grab

Environmental condition during sampling : Temperature : 14°C, Transported in Ice box, Cold chain maintained

Parameter Tested:
pH, TSS, O & G, BOD, COD

TEST FINDINGS:

Sl. No.	Test Parameters	Test Method	Unit	Results	Limit as per Environmental Protection Act, MOE & F for Effluent discharged into Inland surface water
1	pH Value	APHA 23rd edition-4500H+B	...	7.5	5.5 – 9.0
2	Total Suspended Solids (TSS)	APHA 23rd edition 2540D	mg/l	14	100 (Max.)
3	Oil & Grease (O & G)	APHA 23rd edition 5520B	mg/l	< 2	10 (Max.)
4	Biochemical Oxygen Demand for 3 days at 27°C (BOD)	I.S. 3025 (Part – 44) – 1993	mg/l	5.4	30 (Max.)
5	Chemical Oxygen Demand (COD)	APHA 23rd edition 5220B	mg/l	26	250 (Max.)

Remarks : The sample of Effluent complies with Environmental Protection Act, MOE & F for effluent discharged into Inland Surface water in respect of above mentioned parameters.

Note : Minimum Detection Limit of TSS .. 10 mg/l., Oil & Grease .. 2 mg/l.

:- END OF TEST REPORT:-


Report Verified by
(J. Das)


(Dr. R. KARIM)
Technical Manager
Authorised Signatory



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS
(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR
9, BENTINCK STREET, KOLKATA - 700 001
Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Fax : 33 2248-0447
E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com
CIN : U51109WB1931PTC007007



TC-12347

TEST REPORT

No. W(D)/23-24/3484 Date : January 27, 2024 Page 1 of 1

Issued to	: M/S, BOKARO POWER SUPPLY COMPANY (P) LTD. Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001	
Sample Description	: Surface Water	Environmental conditions during sampling Temperature: 20°C, Transport by : Through Ice Box Transport condition : Cold chain maintained
Collection Source	: Kachanpur Pond Water	
Sample Drawn by us on	: 17.01.2024 at 01:10pm	Parameters Tested: Chemical Parameters Cu, Zn, Pb, Sulphate, Cd, Se, As & Total Chromium
Sample carried out by	: Subrata Mondal	
Sampling Plan :	: RVB/FM/46	
Method of Sampling	: IS : 17614 (Part - 1) : 2021	
Mode of Sampling	: Grab	
Analysis Completed on	: 25.01.2024	

Chemical Test Findings :

Sl. No.	Test Parameters	Test Specification	Unit		Norms as per IS:2296:1982(Class C)
1	Copper as Cu	IS: 3025 (Part-42): 1992	mg/l	< 0.05	1.5 Max
2	Selenium as Se	IS: 3025 (Part-56): 2003	mg/l	< 0.01	0.05 Max
3	Sulphates as SO ₄	IS: 3025 (Part-24): 1986	mg/l	65.4	400 Max
4	Zinc as Zn	IS: 3025 (Part-49): 1994	mg/l	< 0.05	15 Max
5	Cadmium as Cd	IS: 3025 (Part-41): 1992	mg/l	< 0.002	0.01 Max
6	Lead as pb	IS: 3025 (Part-47): 1994	mg/l	< 0.01	0.1 Max
7	Arsenic as As	IS: 3025 (Part-37): 1988	mg/l	< 0.002	0.2 Max
8	Chromium Hexavalent as Cr	IS: 3025 (Part-52): 2003	mg/l	< 0.04	0.05 Max

Minimum detection limit :

i) Copper : 0.05mg/l (ii) Selenium : 0.01mg/l (iii) Cadmium : 0.002mg/l (iv) Lead : 0.01mg/l (v) Chromium Hexavalent : 0.04mg/l (vi) Zinc : 0.05mg/l

Remarks on Chemical Test Report :

The above mentioned sample of Surface water complies with IS : 2296 : 1982 (Class C) & Satisfactory, in respect of the above mentioned parameters.

: END OF TEST REPORT :


Report Verified by
(J. DAS)


Dr. R. KARIM
Technical Manager
Authorized Signatory
For R.V.BRIGGS & CO. PRIVATE LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS
(AN ISO 9001:2015 & ISO 45001 : 2018 CERTIFIED COMPANY)

TAHER MANSION, 1ST FLOOR
9, BENTINCK STREET, KOLKATA - 700 001
Phone : (033) 4044-3380 / 3381 / 3382 / 3383, Fax : 33 2248-0447
E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com
CIN : U51109WB1931PTC007007

TEST REPORT

No. W(D)/23-24/3484 Date : January 27, 2024 Page 2 of 2

Issued to : M/S, BOKARO POWER SUPPLY COMPANY (P) LTD.
Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001

Sample Description	: Surface Water	Environmental conditions during sampling
Collection Source	: Kachanpur Pond Water	Temperature: 20 ^o C,
Sample Drawn by us on	: 17.01.2024 at 01:10pm	Transport by : Through Ice Box
Sample carried out by	: Subrata Mondal	Transport condition : Cold chain maintained
Sampling Plan :	: RVB/FM/46	Parameters Tested:
Method of Sampling	: IS : 17614 (Part - 1) : 2021	Chemical Parameters
Mode of Sampling	: Grab	Al, Ba, Mg, Ni, Mn, Hg,
Analysis Completed on	: 25.01.2024	Alpha emitters & Beta emitters

Chemical Test Findings :

Sl No.	Test parameters	Test Method	Unit	Results
1	Aluminium as Al	IS: 3025 (Part-55): 2003	mg/l	<0.03
2	Barium as Ba	APHA 24th Edn. 3110D	mg/l	<0.5
3	Magnesium as Mg	IS: 3025 (Part-46): 1994	mg/l	21.9
4	Manganese as Mn	IS: 3025 (Part-59): 2006	mg/l	0.06
5	Mercury as Hg	IS: 3025 (Part-48): 1994	mg/l	<0.001
6	Nickel as Ni	IS: 3025 (Part - 54) 2003	mg/l	<0.01
7a)	Alpha emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable
7b)	Beta emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable

Minimum detection :

i) Aluminium : 0.03mg/l (ii) Barium : 0.5mg/l (iii) Nickel : 0.01mg/l (iv) Mercury : 0.001mg/l

: END OF TEST REPORT :


Report Verified by
(J. DAS)


(Dr. R. KARIM)
Technical Manager
Authorized Signatory
For R.V.BRIGGS & CO. PRIVATE LTD.



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CIN : U51109WB1931PTC007007



TC-12347

TEST REPORT

No. W(D)/23-24/3486

Date : January 27, 2024

Page 1 of 1

Issued to

: M/S, BOKARO POWER SUPPLY COMPANY (P) LTD.

Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001

Sample Description	: Surface Water	Environmental conditions during sampling Temperature: 20°C, Transport by : Through Ice Box Transport condition : Cold chain maintained
Collection Source	: Ash Pond Water	
Sample Drawn by us on	: 17.01.2024 at 01:20pm	
Sample carried out by	: Subrata Mondal	Parameters Tested: Chemical Parameters Cu, Zn, Pb, Sulphate, Cd, Se, As & Total Chromium
Sampling Plan :	: RVB/FM/46	
Method of Sampling	: IS : 17614 (Part - 1) : 2021	
Mode of Sampling	: Grab	
Analysis Completed on	: 25.01.2024	

Chemical Test Findings :

Sl. No.	Test Parameters	Test Specification	Unit	Results	Norms as per IS:2296:1982(Class C)
1	Copper as Cu	IS: 3025 (Part-42): 1992	mg/l	< 0.05	1.5 Max
2	Selenium as Se	IS: 3025 (Part-56): 2003	mg/l	< 0.01	0.05 Max
3	Sulphates as SO ₄	IS: 3025 (Part-24): 1986	mg/l	55.4	400 Max
4	Zinc as Zn	IS: 3025 (Part-49): 1994	mg/l	0.218	15 Max
5	Cadmium as Cd	IS: 3025 (Part-41): 1992	mg/l	< 0.002	0.01 Max
6	Lead as pb	IS: 3025 (Part-47): 1994	mg/l	< 0.01	0.1 Max
7	Arsenic as As	IS: 3025 (Part-37): 1988	mg/l	< 0.002	0.2 Max
8	Chromium Hexavalent as Cr	IS: 3025 (Part-52): 2003	mg/l	< 0.04	0.05 Max

Minimum detection limit :

i) Copper : 0.05mg/l (ii) Selenium : 0.01mg/l (iii) Cadmium : 0.002mg/l (iv) Lead : 0.01mg/l (v) Chromium Hexavalent : 0.04mg/l (vi) Arsenic : 0.002mg/l

Remarks on Chemical Test Report :

The above mentioned sample of Surface water complies with IS : 2296 : 1982 (Class C) & Satisfactory, in respect of the above mentioned parameters.

: END OF TEST REPORT :


Report Verified by
(J. DAS)


Dr. R. KARIM
Technical Manager
Authorized Signatory
For R.V.BRIGGS & CO. PRIVATE LTD.

nb

★ The test report shall not be reproduced, except in full, without written approval of the Company.
★ Results relate only to the parameters tested.



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CIN : U51109WB1931PTC007007

TEST REPORT

No. W(D)/23-24/3486

Date : January 27, 2024

Page 2 of 2

Issued to

: M/S, BOKARO POWER SUPPLY COMPANY (P) LTD.

Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001

Sample Description	: Surface Water	Environmental conditions during sampling Temperature: 20°C, Transport by : Through Ice Box Transport condition : Cold chain maintained
Collection Source	: Ash Pond Water	
Sample Drawn by us on	: 17.01.2024 at 01:20pm	Parameters Tested: Chemical Parameters Al, Ba, Mg, Ni, Mn, Hg, Alpha emitters & Beta emitters
Sample carried out by	: Subrata Mondal	
Sampling Plan :	: RVB/FM/46	
Method of Sampling	: IS : 17614 (Part - 1) : 2021	
Mode of Sampling	: Grab	
Analysis Completed on	: 25.01.2024	

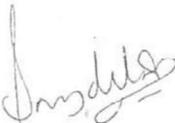
Chemical Test Findings :

Sl No.	Test parameters	Test Method	Unit	Results
1	Aluminium as Al	IS: 3025 (Part-55): 2003	mg/l	<0.03
2	Barium as Ba	APHA 24th Edn. 3111D	mg/l	<0.5
3	Magnesium as Mg	IS: 3025 (Part-46): 1994	mg/l	18.1
4	Manganese as Mn	IS: 3025 (Part-59): 2006	mg/l	0.07
5	Mercury as Hg	IS: 3025 (Part-48): 1994	mg/l	<0.001
6	Nickel as Ni	IS: 3025 (Part - 54) 2003	mg/l	<0.01
7a)	Alpha emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable
7b)	Beta emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable

Minimum detection :

i) Aluminium : 0.03mg/l (ii) Barium : 0.5mg/l (iii) Nickel : 0.01mg/l (iv) Mercury : 0.001mg/l

: END OF TEST REPORT :


Report Verified by
(J. DAS)


(Dr. R. KARIM)
Technical Manager
Authorized Signatory
For R.V.BRIGGS & CO. PRIVATE LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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CIN : U51109WB1931PTC007007



TC-12347

TEST REPORT

ULR NO. TC123472400000511

No. W(D)/23-24/3485

Date : January 27, 2024

Page 1 of 1

Issued to

M/S, BOKARO POWER SUPPLY COMPANY (P) LTD.

Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001

Sample Description	: Ground Water	Environmental conditions during sampling
Collection Source	: Madidih Borewell Water	Temperature: 22°C,
Sample Drawn by us on	: 17.01.2024 at 12.40pm	Transport by : Through Ice Box
Sample carried out by	: Subrata Mondal	Transport condition : Cold chain maintained
Sampling Plan :	: RVB/FM/46	Parameters Tested:
Method of Sampling	: IS : 17614 (Part - 1) : 2021	Chemical Parameters
Mode of Sampling	: Grab	Al, Ba, Cu, Mg, Zn, Mn, Se, Cd, Ni, Pb,
Analysis Completed on	: 25.01.2024	Hg, As, Sulphate & Total Chromium

Chemical Test Findings :

Sl No.	Test parameters	Test Method	Unit	Results	Norms as per IS : 10500, 2012 (2nd Rev.) & Amendment No. 2, September 2018	
					Acceptable Limit	Permissible Limit
1	Aluminium as Al	IS: 3025 (Part-55): 2003	mg/l	<0.03	0.03 Max.	0.2 Max.
2	Barium as Ba	APHA 24th Edn. 3110D	mg/l	<0.5	0.7 Max.	No Relaxation
3	Copper as Cu	IS: 3025 (Part-42): 1992	mg/l	<0.05	0.05 Max.	1.5 Max.
4	Magnesium as Mg	IS: 3025 (Part-46): 1994	mg/l	26.7	30 Max.	100 Max.
5	Manganese as Mn	IS: 3025 (Part-59): 2006	mg/l	0.24	0.1 Max.	0.3 Max.
6	Selenium as Se	IS: 3025 (Part-56): 2003	mg/l	<0.01	0.01 Max.	No Relaxation
7	Sulphate as SO ₄	IS: 3025 (Part-24): 1986	mg/l	86.4	200 Max.	400 Max.
8	Nickel as Ni	IS: 3025 (Part - 54) 2003	mg/l	<0.01	0.02 Max.	No Relaxation
9	Arsenic as As	IS: 3025 (Part-37): 1988	mg/l	<0.002	0.01 Max.	0.05 Max.
10	Total Chromium as Cr	IS: 3025 (Part-52): 2003	mg/l	<0.05	0.05 Max.	No Relaxation
11	Zinc as Zn	IS: 3025 (Part-49): 1994	mg/l	< 0.05	5 Max.	15 Max.
12	Cadmium as Cd	IS: 3025 (Part-41): 1992	mg/l	<0.002	0.003 Max.	No Relaxation
13	Lead as Pb	IS: 3025 (Part-47): 1994	mg/l	<0.01	0.01 Max.	No Relaxation
14	Mercury as Hg	IS: 3025 (Part-48): 1994	mg/l	<0.001	0.001 Max.	No Relaxation

Minimum detection limit :

i) Aluminium : 0.03mg/l (ii) Barium : 0.5mg/l (iii) Copper : 0.05mg/l (iv) Selenium : 0.01mg/l (v) Lead : 0.01mg/l (vi) Cadmium : 0.002mg/l (vii) Mercury : 0.001mg/l (viii) Nickel : 0.01mg/l (ix) Arsenic : 0.002mg/l (x) Total Chromium : 0.05mg/l (xi) Zinc : 0.05mg/l

Remarks on Chemical Test Report :

- i) The above mentioned sample of water complies with IS: 10500, 2012 (2nd Rev.) Amendment No. 2, September 2018 & Satisfactory for drinking purpose, in respect of the above mentioned parameters.
ii) Manganese is beyond the acceptable limit but within the permissible limit

: END OF TEST REPORT :


Report Verified by
(J. DAS)


(Dr. R. KARIM)
Technical Manager
Authorized Signatory
For R.V.BRIGGS & CO. PRIVATE LTD.



R. V. BRIGGS & CO. PRIVATE LTD.

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TEST REPORT

No. W(D)/23-24/3485

Date : January 27, 2024

Page 2 of 2

Issued to

: M/S, BOKARO POWER SUPPLY COMPANY (P) LTD.

Hall No. M-01, Old ADM Building, Ispat Bhawan, Bokaro Steel City - 827001

Sample Description	: Ground Water	Environmental conditions during sampling
Collection Source	: Madidih Borewell Water	Temperature: 22°C,
Sample Drawn by us on	: 17.01.2024 at 12.40pm	Transport by : Through Ice Box
Sample carried out by	: Subrata Mondal	Transport condition : Cold chain maintained
Sampling Plan :	: RVB/FM/46	Parameters Tested:
Method of Sampling	: IS : 17614 (Part - 1) : 2021	Chemical Parameters
Mode of Sampling	: Grab	Radioactive Parameters
Analysis Completed on	: 25.01.2024	Alpha emitters, Beta emitters

Chemical Test Findings :

Radioactive Parameters

Sl No.	Test parameters	Test Method	Unit	Results	Norms as per IS : 10500, 2012 (2nd Rev.) & Amendment No. 2, September 2018	
					Acceptable Limit	Permissible Limit
1a)	Alpha emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable	0.1 Max.	No Relaxation
1b)	Beta emitters	APHA 24th Edn. 7110B	Bq/l	Not detectable	1.0 Max.	No Relaxation

Remarks on Chemical Test Report :

The above mentioned sample of drinking water complies with IS: 10500, 2012 (2nd Rev.) & Satisfactory for drinking purpose, in respect of the above mentioned parameters.

: END OF TEST REPORT :

Report Verified by
(J. DAS)

(Dr. R. KARIM)
Technical Manager
Authorized Signatory

For R.V.BRIGGS & CO. PRIVATE LTD.

33085



दामोदर घाटी निगम / DAMODAR VALLEY CORPORATION
बोकारो ताप विधुत केंद्र / BOKARO THERMAL POWER STATION
पोस्ट - बोकारो थर्मल, जिला : बोकारो (झारखण्ड) - 829107
P.O: BOKARO THERMAL, DIST: BOKARO (JHARKHAND) - 829107

सं०: बीटी / द्विभाषी / जीएम एवं एचओपी / 18/ 21
No.: BT /Bilingual/GM & HOP /18/ 21

दिनांक: 08.03.2024
Date: 08.03.2024

सेवा में,
उपायुक्त, बोकारो,
अध्यक्ष, जिला गंगा समिति,
कैम्प - II रोड, बोकारो सेक्टर 1,
बोकारो स्टील सिटी,
पीन नं.- 827001, झारखंड ।

विषय:- जिला गंगा समिति की दिनांक 24.02.2024 को सम्पन्न बैठक में दिए गए निर्देश के आलोक में
अधतन प्रतिवेदन उपलब्ध कराने के सम्बंध में ।

संदर्भ 1. झारखंड राज्य प्रदूषण नियंत्रण पर्षद का पत्रांक 452 दिनांक 29.02.2024.

2. जिला गंगा समिति, ज्ञापांक 290 / विधि, दिनांक 27.02.2024.

महोदय,

उपरोक्त विषय संबंधित पत्र हमारे कार्यालय को प्राप्त हुआ जिसमें जिला गंगा समिति की दिनांक
24.02.2024 को आहुत बैठक की बैठक का कार्यवृत्त संलग्न है ।

इस संदर्भ में बोकारो ताप विधुत केंद्र , डीवीसी से संबंधित बिंदुओं का अनुपालन प्रतिवेदन संलग्नित है जिसे
प्राप्त करने की कृपा की जाए ।

धन्यवाद/Thanking you,

भवदीय/ Yours faithfully,

Anand Mohan Prasad
08/03/2024

(आनंद मोहन प्रसाद/ Anand Mohan Prasad)

वरिष्ठ महाप्रबंधक एवं परियोजना प्रधान/ Sr. General Manager & HOP
दाघानि, बोताविके /DVC, BTPS.

प्रतिलिपि:

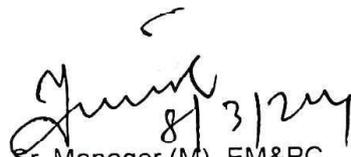
1. क्षेत्रीय पदाधिकारी, झारखंड राज्य प्रदूषण नियंत्रण पर्षद, धनबाद ।

Compliance report of points given in the minutes of meeting dated 24.02.2024 of District Ganga Committee in respect to Bokaro Thermal Power Station, DVC:-

SL. NO.	ISSUES/POINTS	COMPLAIANCE STATUS AS ON DATE
1	Fly Ash from (TPP) i.e. BTPS	<p>(a) Dry Fly Ash generated is conveyed pneumatically through Dry Fly Ash Collection system and subsequently, collected in two (2) no. of silos of capacity 2x1200 MT. Dry fly ash is being taken by outside engaged cement manufacturing agencies.</p> <p>Apart from above, Dry fly ash is being provided to many fly ash based brick plants through engaging an entrepreneur M/s B. K. Mahto, BTPS, Bokaro. In addition to the above, we have approached many entrepreneurs in nearby villages and aware them about benefits of fly ash bricks resulting some people have established their brick manufacturing units.</p> <p>(b) Pond ash is being utilized in filling of low lying areas in Khutri near Jenamore, JIADA/BIADA near Balidih and in NHA Dhanbad & Ramgarh. MoU has been made with NHA Dhanbad & Ramgarh for a quantity of 20 Lacs MT & 10 Lacs MT respectively. BTPS is trying to maximize the utilization of fly ash.</p> <p>Ash utilization is around 127.08 % of total fly ash generation in FY 2023-24 (till 06.03.2024).</p> <p>Pond ash transportation is being done in environment friendly manner and in full supervision of BTPS with making proper cleaning of vehicles at ash pond site and fully covered with tarpaul/other foolproof arrangement so that any kind of spillage of Fly Ash could not be taken place during transportation.</p>
2	River passes through west Bokaro and East Bokaro flows into Konar River shortly before the latter flows into the Damodar River, pollute with industrial and domestic effluents.	<p>BTPS Ash pond is ZLD complied. Ash Water Recirculation System (AWRS) is in service. All ash ponds have gargling system for ash slurry discharge in proper manner to control air pollution as well as any kind of water pollution.</p> <p>Installation work of 02 numbers of Sewage Treatment Plant (STP) is under progress at BTPS. Probable date of completion is 05.12.2024.</p> <p>Rain Water Harvesting Pond is in service at BTPS.</p> <p>In house monitoring as well as monitoring by Third Party is being done regularly, report of which is being sent regularly to the regulatory bodies offices like MOEF&CC, CPCB, JSPCB, etc.. Presently environmental monitoring work is being carried out by M/s Biocrat Environmental Services (approved by JSPCB). The test results in respect of the Pollution related parameters have been found well within permissible limit. A copy of test report</p>

		for the month of January, 2024 is enclosed herewith. In addition to the above, System for display of Online Monitoring Data for effluent to JSPCB and CPCB has been installed at BTPS and functioning well and data is being transferred online to the pollution boards.
3	<u>Industrial profile of Damodar River Basin:-</u> BTPS Bokaro Thermal power Plant discharges into Ganga river (BSP) EC imposed.	Compliance as stated in Point No. (2) Above. However, BTPS is very much careful to the protection of Damodar River.
4	<u>Key Pollution issues:-</u> Disposal of Fly Ash from(TPP),	Compliance as stated in Point No. (1) above
5	The over burden of mines, the rejects of coal washeries and ash of thermal power plants are kept either on riverbed or near the river which sooner or later goes to river, further 11 sewages of towns, townships and suburbs, finds way to downstream through septic tank, and soak pits.	The fly ash is being disposed in confined and well maintained 02 numbers Ash Ponds with protection of two numbers of double decantation ponds provided for each. The ash ponds are being taking in service alternatively. The effluent after settlement in original pond gets double decanted in double decantation pond and clear water is recirculated through Ash Water Recirculation System (AWRS) into the plant for reusing it for making ash slurry. The distance between ash ponds and River has been maintained such a way that direct flow of effluent may be restricted as per guidelines of MOEF&CC. The distance between ash ponds and River is approx. 07 KMs.


08/03/24
Manager (M), EM&PC
DVC, BTPS


8/3/24
Sr. Manager (M), EM&PC
DVC, BTPS

Annexure -A

SL No as per key pollution issue	Issues	Concerned Departments who have to submit report
8	Disposal of Fly ash from TPP	CTPS, DVC has two running units namely u #7&8 and each having 250 MW generating capacity. Considering annual PLF 85% total ash generation is around of 3200-3400 MT on daily basis in which fly ash generation is around 2300-2500 MT on daily basis. Two cement manufacturing companies namely M/s ACC LTD, Sindri & M/s Dalmia, Bokaro are lifting fly ash around 1800 to 2000 MT from our silo per day and balance quantity i.e. 200 to 300 MT is transferred to ash pond through running ash slurry pumps and further around 3000 MT pond ash is evacuated by Hyvas/ trucks on daily basis which is more than 100% evacuation and their utilization for filling of mines & Nhai for road making.
9	The over burden (OB) of mines, the rejects of coal washeries and ash of Thermal Power Plants are kept either on the river bed or near the river, which sooner or later go to the river. Further, the 11 sewage of towns, townships and suburbs finds way to downstream through septic tanks and soak pits.	Ash ponds are meant for storage of bottom ash which are situated sufficiently away from the riverbank. Our ash pond dyke has sufficient strength to take of the load of ash. Moreover, pond ash is evacuated more than total generated ash on daily basis by Hyva's/ Trucks through road mode and so there is no chance of spillover of ash into the river.

33088


 09/08/2024
 Sr. Manager
 Section - EM&PC, DVC, CTPS Chandrapura



33089

JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004

Phone.:2400852, 2400851, Fax:0651- 2400850 www.jspcb.org

FORM 2

[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

1. No. of authorization and date of issue: JSPCB/HO/RNC/HWM-14851520/2023/58 04/09/2023
2. Reference of application(No. and date): 14851520 26/11/2022
3. DAMODAR VALLEY CORPORATION, CTPS of Sri R N Singh is hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at Chandrapura Thermal Power Station, Damodar Valley Corporation, PO. Chandrapura, Dist. Bokaro, PIN-828403, Tel. No. : 06549-242267, Telegraphic Address: ` DAVALLEC

Details of Authorisation

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)
1	5.1 (Used Oil)	Kept in Bags; Disposed through authorized TSDF	60 KL/Annum
2	5.2 (Oil Contaminated Waste)	Stored in concrete tank under shed	-
3	33.1 (Empty barrels/containers/liners contaminated with hazardous chemicals/waste)	NA	NA
4	35.2 (Spent Oil exchange resin containing toxic metals)	NA	NA

(1) The authorisation shall be valid for a period of Date of issue to 18.03.2025 years

(2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A General conditions of authorisation:

33090

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B Specific conditions:

1. That, the occupier shall take prior permission of the Board to close down the plant.
2. That, the renewal of authorization will be subject to compliance of the conditions laid down in this authorization.
3. That, the occupier shall comply with the conditions as per the guidelines prescribed by the MoEF for CPCB.
4. That, the occupier shall comply with all the conditions laid down in this authorization.
5. That, the occupier shall submit quarterly report on hazardous wastes generated and consumed in its sources, products generated or resources conserved (specifying the details like type and quantity of resources conserved) to the Board.
6. That, the occupier shall maintain a log book containing information on quantity on generation, date wise utilization of the same and its disposal, etc.
7. That, the occupier shall maintain record of Hazardous Waste utilized, Hazardous Waste generated and disposal as per form-3 and shall submit the annual returns in form-4 as per Rule 20 (1) and (2) of the Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 to the Board.
8. That, the occupier shall comply with all the directions given by standard operating procedure.
9. That, the occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.
10. That, the hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
11. That, the hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
12. That, the occupier shall take all the steps while managing hazardous and other wastes to-
(a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
(b) provide persons working in the site with protective measures.
13. That, the occupier shall comply with all the conditions laid down in this authorization mentioned in general and specific conditions.
14. That, the occupier shall install a display Board outside its plant showing details such as
(a) status of CTO;
(b) Status of authorization granted ;
(c) Disposal/reuse of hazardous waste generated in the plant and other relevant information as per prescribed guideline and update the same as required.

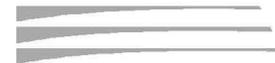
Memo No.:JSPCB/HO/RNC/HWM-
14851520/2023/58
Date: 04/09/2023

**Yatindra
Kumar
Das** Digitally signed
by Yatindra
Kumar Das
Date: 2023.09.04
09:54:28 +05'30'
Y K Das
Member Secretary

Copy To:

Deputy Commissioner, Bokaro/ Regional office-Cum-Laboratory, Dhanbad for information and necessary action.

**Yatindra
Kumar
Das** Digitally signed
by Yatindra
Kumar Das
Date:
2023.09.04
09:54:28 +05'30'
Y K Das
Member Secretary

Material Safety Data Sheet - MSDS**MARSULEX****Dry Alum****Section 1. Chemical Product and Company Identification**

Trade name	: Dry Alum	Headquarters	: Marsulex Inc. 111 Gordon Baker Road Suite 300 North York, ON M2H 3R1 (416) 496-9655 www.marsulex.com
Material uses	: Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.		
Validation date	: 11/15/2007		
In case of emergency	: Canada : CANUTEC 1-613-996-6666 US : CHEMTREC: 1-800-424-9300		

Section 2. Hazards identification

Physical state and Appearance : Solid. (Granules or powder.)

This material is classified hazardous under OSHA regulations in the United States and the WHMIS Controlled Product Regulation in Canada.

Emergency overview : WARNING!
CAUSES EYE AND SKIN IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes : The dust becomes acidic following contact with moisture in the eye and may result in moderate to severe irritation to eyes.

Skin : The dust becomes acidic following contact with moisture on the skin and mild to moderate irritation can occur. Aluminum is very poorly absorbed through the skin and toxic effects would not be expected following short-term skin contact. Prolonged and repeated exposure to dilute solutions may cause irritation, redness, pain and drying and cracking of the skin.

Inhalation : Dusts of aluminum sulfate hydrate probably cause irritation of the nose, throat and respiratory tract based on pH. The dust becomes acidic following contact with moisture in the air or tissues of the respiratory tract.

Ingestion : May cause irritation of the lining of the stomach. Ingestion is not a typical route of occupational exposure.

Potential chronic health effects : CARCINOGENIC EFFECTS: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : Skin irritation may be aggravated in individuals with existing skin lesions. Breathing of dust may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

Over-exposure signs/symptoms : Prolonged or repeated contact with dust may cause redness, dryness and itching of the skin (dermatitis).

[See Section 11 for Toxicological Data.](#)

Continued on next page

Section 3. Composition/information on ingredients

Name	CAS #	% by weight
Aluminum Sulfate Hydrate	16828-12-9	99

See Section 8 for Exposure Limits.

See Section 11 for Toxicological Data.

Section 4. First Aid Measures

- Eye contact** : Immediately flush eyes with lukewarm, gently running water for a minimum of 5 minutes or until the chemical is removed. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.
- Skin contact** : Flush skin with lukewarm running water for a minimum of 5 minutes or until the chemical is removed. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing and obtain medical attention. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport.
Discard heavily contaminated clothing and shoes in a manner, which limits further exposure. Otherwise, wash clothing separately before reuse.
- Inhalation** : Move victim to fresh air. If irritation persists, obtain medical attention immediately. Give artificial respiration ONLY if breathing has stopped. Give Cardiopulmonary Resuscitation (CPR) if there is no breathing AND no pulse. Obtain medical attention IMMEDIATELY.
- Ingestion** : If irritation or discomfort occur, obtain medical advice immediately.
- Notes to physician** : Not available.

Section 5. Fire Fighting Measures

- Flammability of the product** : Non-flammable.
- Auto-ignition temperature** : Not applicable.
- Flash points** : Not applicable.
- Flammable limits** : Not applicable.
- Products of combustion** : Forms aluminum oxide, sulfur dioxide and/or sulfur trioxide at temperatures reported above 650 °C (1200°F).
- Fire hazards in the presence of various substances** : Not applicable.
- Explosion hazards in the presence of various substances** : Dry alum will dissolve in water to form sulfuric acid which reacts with some metals, especially when dilute, to give flammable, potentially explosive hydrogen gas. Hydrogen gas can accumulate to explosive concentrations inside confined spaces. Follow appropriate NFPA codes.
- Fire-fighting media and instructions** : Use appropriate extinguisher for surrounding material.
- Protective clothing (fire)** : The decomposition products are corrosive and hazardous to health. Wear a NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if vapors or mists are present. For fighting fires in close proximity to spill or vapors, use acid-resistant personal protective equipment. Evacuate residents who are downwind of fire. Prevent unauthorized entry to fire area. Dike area to contain runoff and prevent contamination of water sources. Neutralize runoff with lime, soda ash or other suitable neutralizing agents (see Deactivating Chemicals, Section 6). Cool containers that are exposed to flame with streams of water until fire is out. Take care not to get water inside container.

Section 6. Accidental Release Measures

- Small spill and leak** : Shovel into clean, dry, labelled containers and cover. Flush area with water. Do not get water inside containers or on spilled material.
- Large spill and leak** : Prevent solids from mixing with water or entering sewers or waterways. Shovel into clean, dry, labelled containers and cover. If liquid is present, dike with inert material (sand, earth, etc.). Consider in situ neutralization and disposal. Ensure adequate decontamination of tools and equipment following clean up. Comply with Federal, Provincial/State and local regulations on reporting releases.
Deactivating Chemicals: Lime, limestone, soda ash, sodium bicarbonate, dilute sodium hydroxide, dilute aqua ammonia.

Continued on next page

Section 7. Handling and Storage

- Handling** : Dry Alum is an irritating solid. Avoid generating dusts. Do not breathe dusts. Do not ingest. Do not get in eyes, on skin or on clothing. Use proper tools when opening containers. Keep containers closed when not in use. Empty containers may contain hazardous residues. When there is a large-scale use, do not use in areas equipped with sprinkler systems. Post "DO NOT USE WATER" signs. Good housekeeping is important to prevent accumulations of dust. Dry sweeping is not recommended.
- Storage** : Keep container tightly closed. Keep container in a cool, dry, well-ventilated area. Store away from incompatible materials such as strong bases. Post warning signs.

Section 8. Exposure Controls, Personal Protection

- Engineering controls** : Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact. Use a corrosion resistant ventilation system separate from other exhaust ventilation systems.

Personal protection

- Eyes** : Splash goggles.
- Body** : Lab coat or coveralls.
- Respiratory** : NIOSH/MSHA approved dust mask, for dust concentrations of up to 10 mg/m³. Air-purifying respirator equipped with acid gas/fume, dust, mist cartridges for concentrations up to 20 mg/m³. An air-supplied respirator if concentrations are higher or unknown.
- Hands** : Gloves: Neoprene, PVC, vinyl or rubber.
- Feet** : Appropriate industrial footwear.

Protective clothing (pictograms)



- Personal protection in case of a large spill** : Splash goggles. Full suit. Dust respirator. Boots. Gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

Exposure limits

Product name

Aluminum Sulfate Hydrate

Exposure limits

ACGIH TLV (United States).

TWA: 2 mg/m³ 8 hour(s). Form: as Aluminium (soluble salts)

OSHA PEL (United States).

TWA: 2 mg/m³ 8 hour(s). Form: as Aluminium (soluble salts)

[Consult local authorities for acceptable exposure limits.](#)

Section 9. Physical and Chemical Properties

- Physical state and Appearance** : Solid. (Granules or powder.)
- Color** : White.
- Odor** : Odorless.
- Molecular weight** : 594.4 g/mole
- Molecular formula** : Al₂(SO₄)₃ · 14 H₂O
- pH** : > 2.9 @ 5%.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : 86°C (186.8°F)
- Specific gravity** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Odor threshold** : Not available.
- Evaporation rate** : Not available.

Continued on next page

LogK_{ow} : Not available.
Solubility : Solubility in water at 20°C equivalent to approximately 8 wt-% Al₂O₃.

Section 10. Stability and Reactivity

Stability and reactivity : The product is stable.
Incompatibility with various substances : Strong bases such as sodium hydroxide. Reaction may be violent.
Hazardous decomposition products : Sulfuric acid vapors may be released upon heating and sulfur dioxide and sulfur trioxide may be released upon decomposition.
Hazardous polymerization : Will not occur.

Section 11. Toxicological Information

Toxicity data

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Aluminum Sulfate Hydrate	LD50	>9000 mg/kg	Oral	Rat
	LD50	>9000 mg/kg	Oral	Mouse

Chronic effects on humans : See Section 2.
Other toxic effects on humans : Very hazardous by the following route of exposure: of eye contact (irritant).
 Hazardous by the following route of exposure: of skin contact (irritant).
 Slightly hazardous by the following route of exposure: of inhalation (lung irritant).

Section 12. Ecological Information

Ecotoxicity data

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Aluminum Sulfate Hydrate	Goldfish (LC50)	72 hour(s)	100 mg/l

Products of degradation : Decomposition products may include the following materials: carbon and sulfur oxides (CO₂, CO, SO₃ & SO₄). Toxicity is primarily associated with acidic pH. Acidic soil conditions can develop with the material present leading to release of some trace metals.

Toxicity of the products of biodegradation : The products of biodegradation are more toxic than the original product.

Section 13. Disposal Considerations

Waste information : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

[Consult your local or regional authorities.](#)

Section 14. Transport Information

Canada (TDG) : Not regulated.
United States (DOT) : RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (Aluminum sulfate), 9, PG III.
ERG : 171

Section 15. Regulatory Information

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).
Canada inventory: All components are listed or exempted.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Continued on next page

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

HCS Classification : Irritating material

U.S. Federal Regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

State Regulations : **Connecticut Carcinogen Reporting**: This material is not listed.

Connecticut Hazardous Material Survey: This material is not listed.

Florida substances: This material is not listed.

Illinois Chemical Safety Act: This material is not listed.

Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.

Louisiana Reporting: This material is not listed.

Louisiana Spill: This material is not listed.

Massachusetts Spill: This material is not listed.

Massachusetts Substances: This material is not listed.

Michigan Critical Material: This material is not listed.

Minnesota Hazardous Substances: This material is not listed.

New Jersey Hazardous Substances: This material is not listed.

New Jersey Spill: This material is not listed.

New Jersey Toxic Catastrophe Prevention Act: This material is not listed.

New York Acutely Hazardous Substances: This material is not listed.

New York Toxic Chemical Release Reporting: This material is not listed.

Pennsylvania RTK Hazardous Substances: This material is not listed.

Rhode Island Hazardous Substances: This material is not listed.

California Prop. 65

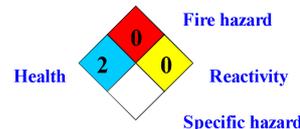
No products were found.

Section 16. Other Information

Hazardous Material Information System (U.S.A.)

Health	2
Fire hazard	0
Physical Hazard	0
Personal protection	E

National Fire Protection Association (U.S.A.)



References

- 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. ANSI Z400.1, MSDS Standard, 2004. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List"
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Manufacturer's Material Safety Data Sheet.

Responsible name

: Atrion Regulatory Services, Inc.

Date of issue

: 11/15/2007

Date of previous issue

: 09/30/2006

Version

: 3

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



SAFETY DATA SHEET

Creation Date 11-Sep-2014

Revision Date 25-Apr-2019

Revision Number 5

1. Identification

Product Name Hydrazine hydrate, 80% (Hydrazine, 51%)

Cat No. : AC209590000; AC209590010; AC209592500

CAS-No 10217-52-4
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 4
Acute oral toxicity	Category 3
Acute dermal toxicity	Category 3
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word

Danger

Hazard Statements

Combustible liquid
 Toxic if swallowed
 Toxic in contact with skin
 Causes severe skin burns and eye damage
 May cause respiratory irritation
 May cause an allergic skin reaction
 Toxic if inhaled
 May cause cancer



Precautionary Statements

Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep cool

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

Wash contaminated clothing before reuse
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 If skin irritation or rash occurs: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

Rinse mouth
 Do NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Hydrazine (hydrate)	10217-52-4	80

4. First-aid measures

Eye Contact	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Remove from exposure, lie down. Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms and effects	Breathing difficulties. Causes burns by all exposure routes. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray. Carbon dioxide (CO ₂). Dry chemical. Chemical foam. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	No information available
Flash Point	91 °C / 195.8 °F
Method -	No information available
Autoignition Temperature	310 °C / 590 °F
Explosion Limits	
Upper	100%
Lower	4.7%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Combustible material. Flammable. Containers may explode when heated. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products

Nitrogen oxides (NO_x) Ammonia Hydrogen

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
3

Flammability
2

Instability
1

Physical hazards
N/A

6. Accidental release measures

Personal Precautions	Remove all sources of ignition. Take precautionary measures against static discharges.
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Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not flush into surface water or sanitary sewer system. Use spark-proof tools and explosion-proof equipment. Remove all sources of ignition.

7. Handling and storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Use only in area provided with appropriate exhaust ventilation. Keep away from open flames, hot surfaces and sources of ignition.

Storage Keep away from heat and sources of ignition. Store under an inert atmosphere. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

8. Exposure controls / personal protection

Exposure Guidelines

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Ammonia-like
Odor Threshold	No information available
pH	12 640 g/l aq.sol
Melting Point/Range	-57 °C / -70.6 °F
Boiling Point/Range	117.2 °C / 243 °F
Flash Point	91 °C / 195.8 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	100%

Lower	4.7%
Vapor Pressure	13 mbar @ 20 °C
Vapor Density	1.1 @ 15 °C
Specific Gravity	1.028
Solubility	Miscible with water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	310 °C / 590 °F
Decomposition Temperature	No information available
Viscosity	1.33 mPa.s at 20 °C
Molecular Formula	H4 N2 . x H2 O
Molecular Weight	32.04

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Do not allow evaporation to dryness. Air sensitive.
Conditions to Avoid	Exposure to air. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Acids, Bases, Powdered metal salts, Halogens, nitrogen oxides (NOx), Organic materials, Peroxides, lead, Metals, copper, Butyl rubber
Hazardous Decomposition Products	Nitrogen oxides (NOx), Ammonia, Hydrogen
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50	Category 3. ATE = 50 - 300 mg/kg.
Dermal LD50	Category 3. ATE = 200 - 1000 mg/kg.
Vapor LC50	Based on ATE data, the classification criteria are not met. ATE > 20 mg/l. Category 3. ATE = 2 - 10 mg/l.

Component Information

Toxicologically Synergistic Products	No information available
--------------------------------------	--------------------------

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Causes severe burns by all exposure routes
Sensitization	May cause sensitization by skin contact
Carcinogenicity	May cause cancer. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Hydrazine (hydrate)	10217-52-4	Not listed				

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen

Mexico - Occupational Exposure Limits - Carcinogens

ACGIH: (American Conference of Governmental Industrial Hygienists)
Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrazine (hydrate)	Not listed	Not listed	EC50 = 0.01 mg/L 15 min EC50 = 0.01 mg/L 20 min EC50 = 0.02 mg/L 5 min	Not listed

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility . Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN2030
Proper Shipping Name HYDRAZINE, AQUEOUS SOLUTION
Hazard Class 8
Subsidiary Hazard Class 6.1

Packing Group	II
TDG	
UN-No	UN2030
Proper Shipping Name	HYDRAZINE, AQUEOUS SOLUTION
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	II
IATA	
UN-No	UN2030
Proper Shipping Name	HYDRAZINE, AQUEOUS SOLUTION
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	II
IMDG/IMO	
UN-No	UN2030
Proper Shipping Name	HYDRAZINE, AQUEOUS SOLUTION
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	II

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Hydrazine (hydrate)	10217-52-4	-	-	-

Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Hydrazine (hydrate)	10217-52-4	-	-	-	-	X	-	X	-

U.S. Federal Regulations

SARA 313

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:
Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 11-Sep-2014

Revision Date 25-Apr-2019

Print Date 25-Apr-2019

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Material Safety Data Sheet

HYDRATED LIME

Rev. Date:10/30/2008

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:		Hi-Cal Hydrate	
Synonym/s:		Hydrate, High Calcium Hydrated Lime, HL	
Manufacturer:	US Operations: Chemical Lime Co. 3700 Hulen St. Fort Worth, TX 76107 817-732-8164	Canadian Operations: Chemical Lime Co. of Canada Inc. 20302-102B Ave. Langley, BC V1M 3H1 604-888-4333	
Emergency Phone:		Chemtrec 1-800-424-9300	
Chemical Name:	Calcium Hydroxide	WHMIS Classification:	
Chemical Family:	Alkaline Earth Hydroxide	D2A, E	
Chemical Formula:	Ca(OH) ₂		
Product Use/s:	Water treatment, pH adjustment, FGT, Construction, Pulp/Paper		
Prepared By:	Chemical Lime Co. R&D/Technical Services, KSA		

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS	OSHA PEL, TWA 8/40h (mg/m ³)	ACGIH TLV, TWA 8/40h (mg/m ³)	NIOSH REL, TWA 8/40h (mg/m ³)	NIOSH IDLH (mg/m ³)	Conc. (%)
Calcium Hydroxide, Ca(OH) ₂ (Hydrated Lime)	1305-62-0	15 (total dust) 5 (respirable)	5	5	N.A.	> 90
Magnesium Hydroxide, Mg(OH) ₂ (Brucite)	1309-42-8	N.A.	N.A.	N.A.	N.A.	< 5
Magnesium Oxide, MgO (Periclase)	1309-48-4	10	10	N.A.	N.A.	< 5
Calcium Carbonate, CaCO ₃ (Limestone)	1317-65-3 (471-34-1)	15 (total dust) 5 (respirable)	10	10 (total dust) 5 (respirable)	N.A.	< 3
Crystalline Silica, SiO ₂ (Quartz)	14808-60-7	10/(SiO ₂ % + 2) (respirable)	0.025 (respirable)	0.05 (respirable)	50	< 2

OSHA Regulatory Status: This material is subject to 29 CFR 1910.1200 (Hazard Communication).

Material Safety Data Sheet

HYDRATED LIME

Rev. Date:10/30/2008

SECTION 3: HAZARDS IDENTIFICATION

Emergency Overview: Hydrate is an odorless white or grayish-white powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract.

Potential Health Effects

Eyes: Contact can cause severe irritation or burning of eyes, including permanent damage.

Skin: Contact can cause irritation of skin.

Ingestion: This product can cause severe irritation of gastrointestinal tract if swallowed.

Inhalation: This product can cause severe irritation of the respiratory system. Long-term exposure may cause permanent damage. Hydrate is not listed by MSHA, OSHA, or IARC as a carcinogen. However, this product may contain trace amounts of crystalline silica in the form of quartz or cristobalite, which has been classified by IARC as a Group I carcinogen to humans when inhaled. Inhalation of silica can also cause a chronic lung disorder, silicosis.

Medical

Conditions Aggravated

by Exposure:

Contact may aggravate disorders of the eyes, skin, gastrointestinal tract, and respiratory system.

Potential

Environmental Effects: This material is alkaline and if released into water or moist soil will cause an increase in pH.

SECTION 4: FIRST AID MEASURES

Eyes: Immediately flush eyes with generous amounts of water or eye wash solution if water is unavailable. Pull back eyelid while flushing to ensure that all lime dust has been washed out. Seek medical attention promptly if the initial flushing of the eyes does not remove the irritant. Do not rub eyes.

Skin: Brush off or remove as much dry lime as possible. Wash exposed area with large amounts of water. If irritation persists, seek medical attention promptly.

Inhalation: Move victim to fresh air. Seek medical attention. If breathing has stopped, give artificial respiration.

Ingestion: Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

Material Safety Data Sheet

HYDRATED LIME

Rev. Date:10/30/2008

SECTION 5: FIRE FIGHTING MEASURES

Fire Hazards:	Hydrate is not combustible or flammable. However, hydrate reacts vigorously with acids, and may release heat sufficient to ignite combustible materials in specific instances. Hydrate is not considered to be an explosion hazard, although reaction with acids or other incompatible materials may rupture containers.
Hazardous Combustion Products:	None
Extinguishing Media:	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of hydrate.
Fire Fighting Instructions:	Keep personnel away from and upwind of fire. Avoid skin contact or inhalation of dust. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill / Leak Procedures:	Do Not use water on bulk material spills. Use proper protective equipment.
Small Spills:	Use dry methods to collect spilled materials. Avoid generating dust. Do not clean up with compressed air. Store collected materials in dry, sealed plastic or non-aluminum metal containers. Residue on surfaces may be water washed.
Large Spills:	Use dry methods to collect spilled materials. Evacuate area downwind of clean-up operations to minimize dust exposure. Store spilled materials in dry, sealed plastic or non-aluminum metal containers.
Containment:	Minimize dust generation and prevent bulk release to sewers or waterways.
Clean-up:	Residual amounts of material can be flushed with large amounts of water. Equipment can be washed with either a mild vinegar and water solution, or detergent and water.

SECTION 7: HANDLING AND STORAGE

Handling:	Keep in tightly closed plastic or non-aluminum metal containers. Protect containers from physical damage. Avoid direct skin contact with the material.
Storage:	Store in a cool, dry, and well-ventilated location. Do not store near acids or other incompatible materials. Keep away from moisture. Do not store or ship in aluminum containers.

Material Safety Data Sheet

HYDRATED LIME

Rev. Date:10/30/2008

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Provide ventilation adequate to maintain PELs.
Respiratory Protection:	Use NIOSH/MSHA approved respirators if airborne concentration exceeds PELs.
Skin Protection:	Use appropriate gloves and footwear to prevent skin contact. Clothing should fully cover arms and legs. Should lime get inside clothing or gloves, remove the clothing and the lime promptly.
Eye Protection:	Use safety glasses with side shields or safety goggles. Contact lenses should not be worn when working with lime products.
Other:	Eye wash fountain/stations and emergency showers should be available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White or grayish-white powder	Odor: Odorless	Physical State: Solid
Boiling Point (°C/°F): 2850 / 5162	Melting Point (°C/°F): dec 580 / 1076	Specific Gravity (Apparent) g/cc: 0.4 - 0.55 (True) g/cc: 2.2 - 2.4
Vapor Pressure (mm Hg): N.A.	Vapor Density: N.A.	Evaporation Rate: N.A.
Solubility in Water Slightly soluble in water.	pH (25°C/77°F): 12.4	

SECTION 10: STABILITY AND REACTIVITY

Stability:	Chemically stable, but slowly reacts with carbon dioxide to form calcium carbonate. See also Incompatibility below.								
Incompatibility/ Conditions to Avoid:	Hydrate should not be mixed or stored with the following materials, due to the potential for vigorous reaction and release of heat:								
	<table border="1"> <tr> <td>Acids (unless in a controlled process)</td> <td>Organic Acid Anhydrides</td> </tr> <tr> <td>Reactive Fluoridated Compounds</td> <td>Nitro-Organic Compounds</td> </tr> <tr> <td>Reactive Brominated Compounds</td> <td>Reactive Phosphorous Compounds</td> </tr> <tr> <td>Reactive Powdered Metals</td> <td>Interhalogenated Compounds</td> </tr> </table>	Acids (unless in a controlled process)	Organic Acid Anhydrides	Reactive Fluoridated Compounds	Nitro-Organic Compounds	Reactive Brominated Compounds	Reactive Phosphorous Compounds	Reactive Powdered Metals	Interhalogenated Compounds
Acids (unless in a controlled process)	Organic Acid Anhydrides								
Reactive Fluoridated Compounds	Nitro-Organic Compounds								
Reactive Brominated Compounds	Reactive Phosphorous Compounds								
Reactive Powdered Metals	Interhalogenated Compounds								
Hazardous Decomposition Products:	None								
Hazardous Polymerization:	None								

Material Safety Data Sheet
HYDRATED LIME

Rev. Date:10/30/2008

SECTION 11: TOXICOLOGICAL INFORMATION

ORL-RAT LD50: 7,340 MG/KG
ORL-MUS LD50: 7,300 MG/KG

Hydrated Lime is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain trace amounts of crystalline silica, which has been classified by IARC as carcinogenic to humans when inhaled in the form of quartz or cristobalite.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems in high concentrations.

Environmental Fate: This material shows no bioaccumulation effect or food chain concentration toxicity.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product as supplied, and unmixed, becomes a waste, it will not meet the criteria of a hazardous waste as defined under the U.S. Resource Conservation and Recovery Act (RCRA).

SECTION 14: TRANSPORTATION INFORMATION

Hydrate is not classified as a hazardous material by US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by any mode of transport.

Material Safety Data Sheet

HYDRATED LIME

Rev. Date:10/30/2008

SECTION 15: REGULATORY INFORMATION

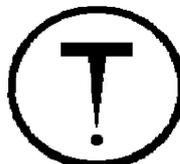
U.S. EPA Regulations: RCRA Hazardous Waste Number (40 CFR 261.33): not listed
 RCRA Hazardous Waste Classification (40 CFR 261): not classified
 CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001;
 CWA, Sec. 311(b)(4); CWA, Sec. 307(a), CAA, Sec. 112
 CERCLA Reportable Quantity (RQ), not listed
 SARA 311/312 Codes: not listed
 SARA Toxic Chemical (40 CFR 372.65): not listed
 SARA EHS (Extremely Hazardous Substance) (40 CFR 355): not listed, Threshold
 Planning Quantity (TPQ): not listed
 All chemical ingredients are listed on the USEPA TSCA Inventory List.

OSHA/MSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): 5mg/M³ TWA-8
 MSHA: not listed
 OSHA Specifically Regulated Substance (29 CFR 1910): not listed

State Regulations: Consult state and local authorities for guidance. Components found in this product may contain trace amounts of inherent naturally occurring elements (such as, but not limited to arsenic and cadmium) that may be regulated.

Canada: WHMIS Classification: "D2A" Materials Causing Other Toxic Effects
 WHMIS Classification: "E" Corrosive Materials (listed due to corrosive effect on aluminum)
 Canada DSL: Listed

NFPA Hazard Class: Health: 1 Flammability: 0 Reactivity: 0
HMIS Hazard Class: Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: E



SECTION 16: OTHER INFORMATION

Prepared By: Chemical Lime Company, R&D/Technical Services, KSA

Chemical Lime Company provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must consult their own technical and legal advisors and/or exercise their own judgment in determining its appropriateness for a particular purpose. Chemical Lime Company makes no representations or warranties, either express or implied, including without limitation and warranties of merchantability or fitness for a particular purpose with respect to the information set forth herein or the product(s) to which the information refers. Accordingly, Chemical Lime Company will not be responsible or liable for any claims, losses or damages resulting from the use of or reliance upon or failure to use this information.



SAFETY DATA SHEET

Creation Date 23-Nov-2009

Revision Date 25-Apr-2019

Revision Number 7

1. Identification

Product Name Ammonium hydroxide

Cat No. : A667-212, A669-212, A669-500, A669P-500; A669-612GAL, A669-385LB, A669C-212, A669S-212, A669S-212EA, A669S-500; NC1020689

Synonyms Ammonia solution; Ammonia water; Ammonium hydrate

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage
May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Use only outdoors or in a well-ventilated area

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Water	7732-18-5	70-75
Ammonium hydroxide	1336-21-6	25-30
Ammonia	7664-41-7	-

4. First-aid measures

General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Centre immediately.