

BALCO/ENV/A-02(A)/2025/492

Date: 16.10.2025

To,
The Integrated Regional Office (IRO),
Ministry of Environment, Forest & Climate Change,
Aranya Bhawan,
North Block, Sector-19,
Nava Raipur, Atal Nagar (CG) 492002.

Sub: Half yearly compliance status (April 2025 to September 2025) for Alumina refinery and
Aluminium Smelter Plant (Potline-1)- BALCO, Korba (CG).

Respected Sir,

Please find enclosed herewith, the half yearly compliance report of the Environmental Clearance No. J-11011/34/2003-IA II (I) dated 05.11.2003 for Alumina refinery and Aluminium smelter plant of Bharat Aluminium Company Limited.

We hope that the above is in line with the referred Environmental Clearance. In case you require any further information, we will be glad to furnish the same.

Yours truly,
On behalf of Bharat Aluminum Company Ltd.



(Authorized Signatory)

Encl: a/a

Copy to: The Regional Officer, Chhattisgarh Environment Conservation Board, Korba.

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**COMPLIANCE STATUS OF EXPANSION OF ALUMINA REFINERY AND ALUMINIUM
SMELTER PLANT BY M/s BHARAT ALUMINIUM COMPANY LIMITED (BALCO) AT
KORBA,(C.G.)**

No. J-11011/34/2003-IA II (I) MOEF – 5 Nov. 2003

Duration: April 2025 to September 2025

A. SPECIFIC CONDITION

Sl. No	Conditions	Compliance status
i	The gaseous emissions from various process units should confirm to the standard prescribed from time to time. The State board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time the emission level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. Ambient air quality monitoring stations should be set up in consultation with the Chhattisgarh Environment Conservation Board. Data should be regularly monitored, and records maintained, and report submitted to the Ministry/CPCB/CECB once in six months.	The gaseous emissions from various process units are within the prescribed standard. CEMS has been installed in the stacks of all units and connected with CPCB/CECB servers for real-time continuous data monitoring. Ambient air quality monitoring stations have been set up in consultation with the Chhattisgarh Environment Conservation Board (CECB) and data is regularly monitored and records are maintained. Reports are submitted to CECB every month and to the Ministry/CPCB once every six months. (Copy of stack emission reports are attached as Annexure-I and copy of ambient air quality reports are attached as Annexure- II).
li	There should be no discharge of process effluent as reflected in the EIA/EMP report. The proposed refinery and smelter plant shall be designed for zero discharge. In addition, efforts shall be made to reuse wastewater from the existing plant. The domestic wastewater after treatment in Sewage Treatment Plant should be used for green belt development.	The Smelter unit has been designed for zero effluent discharge and best efforts are made so that there is no discharge of process effluent from Smelter unit. Efforts are made to reuse the wastewater from smelter after treatment. The domestic wastewater is treated in Sewage Treatment Plant and the treated water is being used for Horticulture/ Greenbelt development purposes.
lii	In plant control measures for checking fugitive emission from spillage/ raw materials handling should be provided. Fluoride emissions should be monitored from the existing pot room, proposed pot and in the forage around the smelter complex. Further, a dry scrubbing system to control the emissions from the pot lines should be provided. The fluoride emissions shall not exceed 0.8 Kg/t of aluminium produced.	A fume treatment plant along with proper pot hoods is in place to check fugitive emissions. Fluoride emissions from pot rooms and forage fluoride around the smelter complex are monitored regularly. (Copy of fugitive emission reports are attached as Annexure -III and copy of forage fluoride monitoring reports attached as Annexure – IV). Dry scrubbing system has been provided in the Pre-baked Smelter. Fluoride emissions

		are well within the norms of 0.8 kg/t of Aluminium produced.
iv	The particulate emissions from the new calciner shall be controlled by installation of electrostatic precipitator. The particulate emissions shall not exceed 150 mg/Nm ³ . All the boiler stacks shall be provided with stack height as per the CPCB guidelines. The boiler and calciner stacks should be equipped with continuous monitoring device to check SPM emission levels. The Nox emission from boiler and calciner stacks shall be less than 50 ppm as guaranteed by the manufacturers. Low Nox burners should be installed to control the NOx emissions.	Alumina plant operation has been stopped and this clause is not applicable.
v	The poly-aromatic hydrocarbons from the carbon plant (anode bake oven) should not exceed 2 mg/Nm ³ .	The poly-aromatic hydrocarbons from the carbon plant (anode bake oven) is within 2 mg/Nm ³ . (Copy of stack emission monitoring reports attached as Annexure – I)
vi	The company should adopt a dry disposal (High concentration slurry disposal) system for red mud disposal. The ground water quality should be monitored around the red mud ponds by providing piezometric holes.	The Alumina plant operation has been stopped since September 2009 and we have submitted the letter of intimation for the same to CECB via letter no. No. Kb/Safety/2013/112. The existing red mud ponds have been converted into ash dyke for disposal of fly ash generated from power plants as per approval granted in Environment Clearances received for BALCO Power plants. Ground water quality is being monitored regularly around these ponds/dyke and copy of monitoring reports are submitted to CECB and MoEF&CC. (Copy of groundwater quality monitoring reports attached as Annexure – V).
vii	The spent pot lining generated from the smelter should be utilized for cement/steel manufacturing, alternatively to be disposed off in a secured landfill constructed as per the design of CPCB. The location of the landfill site should be approved by the Chhattisgarh Environment Conservation Board.	For utilizing the Spent Pot Lining (SPL) generated from the Smelter, BALCO has entered into an agreement with following authorized co-processors: 1. M/s Greenmac Technologies, Raipur 2. M/s Shubham Sales Co., Rohtak 3. M/s Ambuja Cement Limited, Bhatapara 4. M/s ACC Limited Jamul 5. M/s Gati Greens India Private Limited 6. M/s Raipur Grinding Corporation

		for detoxification and further usage in cement/steel plants as per Central Pollution Control Board (CPCB) guidelines. The SPL is provided to the authorized co-processor only. Additionally, SLF has been provided as per CPCB guidelines for disposal of Spent Pot linings and other Hazardous Waste (HW) after getting the location and design of the landfill site approved by the CECB as per Hazardous and Other Wastes' (Management and Transboundary Movement) Rules 2016. The approved design and the capping (closure) plan of captive SLF is attached as Annexures VI (Colly) & VII.
viii	A green belt of adequate width and density should be developed in an area of 90 acre within and around the plant premises as per the CPCB guidelines.	Plantation is carried out in and around the plant premises on a regular basis as per the CPCB guidelines to comply with the conditions. CECB approved 3rd party verification has also been completed and report has been submitted to CECB office. (Copy of 3rd party verification report attached as Annexure–VIII and copy of greenbelt details attached as Annexure–IX).
ix	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Regular PME of employees is being conducted and records are maintained as per the Factories Act.
x	All the recommendations of the Charter for Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector should be strictly implemented.	The compliance status of the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) is attached as Annexure – X.
General Conditions		
i	The project authorities must strictly adhere to the stipulation made by the Chhattisgarh Environment Conservation Board and the State Government.	Complied with.
ii	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	No further expansion or modifications in the plant is carried out without prior approval of the Ministry of Environment and Forests.
iii	Adequate ambient air quality-monitoring stations should be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO _x are	Ambient air quality monitoring stations have been established in consultation with Chhattisgarh Environment Conservation Board. We are regularly submitting the

	anticipated in consultation with the State Pollution Control Board. Data on ambient air quality, fugitive emission and stack emissions should be regularly submitted to this ministry including its Regional Office at Bhopal and the State Pollution Control Board/Central Pollution Control Board once in six months.	monitoring reports to CPCB/MOEF on half yearly basis. Copy of stack emission monitoring report attached as Annexure-I , ambient air quality monitoring reports attached as Annexure-II and fugitive emission monitoring reports attached as Annexure-III for the period from April 2025 to September 2025.
iv	Industrial wastewater should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 December, 1993 or as amended from time to time. The treated wastewater should be utilized for plantation purpose.	All the wastewater generated is properly collected and treated in the ETP with RO system and the treated water is reused/recycled in the plant.
v	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under Rules, 1989 viz. 75 dBA (Day time) and 70 dBA (Nighttime).	Noise prone equipment has been provided with acoustic enclosures and noise level kept below 85 dBA. Moreover, noise level is being regularly monitored and personal protective equipment like earplugs and earmuffs have been provided to people working in high noise prone areas. The ambient noise is also being monitored regularly, and all records observed well within the norms. Copy of Ambient noise monitoring report is attached as Annexure-XI .
vi	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further the company must undertake socio-economic development-activities in the surrounding villages like community development programs, educational programs, drinking water supply and health care etc.	All environmental protection measures have been implemented. Socio-economic developmental projects like setting up regular Health Camps and Cancer Hospital, watershed development, upgradation of schools, Mother-Child Care programs have been taken up.
vii	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Separate funds are allocated for the implementation of environmental protection measures and not diverted for any other use.
viii	The Regional Office of this Ministry at Bhopal/Central pollution Control Board/State Pollution Control Board will monitor stipulated conditions. A six monthly compliance report and the monitored data along with Statistical	Complied with. Last report was submitted vide: Letter No. BALCO/ENV/A-02(A)/2025/267 Dated 23rd May 2025.

	interpretation should be submitted to them regularly.	Copy of last submitted report attached as Annexure–XII.
ix	The project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in . ; This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.	Complied with. We had advertised in three newspapers. Please refer to Annexure–XIII.
x	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	The expansion project was approved by MoEFCC vide EC letter No. J-11011/34/2003-IA-II (I) MoEF dated 05.11.2003 and Consent to Establish vide letter No. 4332/TS/CECB/2003 dated 25.11.2003. We have commenced the land development work as per the Consent to Establish and final approval i.e. Consent to Operate vide letter No. 121/TS/CECB/2005 dated 06.01.2005 and letter No. 123/TS/CECB/2005 dated 06.01.2005 .
3.0	The Ministry may revoke or suspend the clearance if implementation of any of the above conditions is not satisfactory.	Noted
4.0	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions	Noted
5.0	The above conditions will be forced, inter-alia under the provisions of the water (Prevention& Control of Pollution) Act 1974, the Air (Prevention &Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 1989/2003 and the Public Liability insurance Act, 1991 along with their amendments and rules.	Noted



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/02532/PL-1			
					Issue Date:	2025-05-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1									
Analysis starting date :- 2025-04-08					Analysis Completion date :- 2025-04-21				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;									
TEST RESULTS									
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method
S No.	Location	Parameter	Limits	Units	2025-04-17	2025-04-09	2025-04-17	2025-04-07	
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-
2		Diameter	-	m	6.7	6.7	6.7	6.7	-
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-
4		Stack Temperature	-	°C	110	115	105	108	-
5		Stack Pressure	-	mmHg	727	732	726	728	-
6		Velocity	-	m/s	11.8	10.7	11.3	10.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1115169	1005046	1080553	1036945	
8		Particulate Matter (PM)	50	mg/Nm ³	2.48	3.55	3.83	2.25	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.048	0.069	0.062	0.079	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.205	0.285	0.296	0.281	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	154	143	143	152	Measured by Portable Combustion Analyser

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/02532/GAP-1			
					Issue Date:	2025-05-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-04-19					Analysis Completion date :- 2025-04-28				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-04-18	2025-04-18	2025-04-18	2025-04-18	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	54	67	44	60	-
5		Stack Pressure	-	mmHg	729	729	728	728	-
6		Velocity	-	m/s	9.8	10.2	7.3	8.1	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	78518	3149	2414	63641	
8		Particulate Matter (PM)	50	mg/Nm ³	11.0	10.9	12.6	18.7	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.052	0.067	0.063	0.047	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	11.4	42.9	37.2	11.4	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	4.1	12.3	2.1	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.013	0.011	0.008	0.014	CARB 429

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/04458/PL-1			
					Issue Date:	2025-06-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1									
Analysis starting date :- 2025-05-20					Analysis Completion date :- 2025-05-24				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;									
TEST RESULTS									
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method
S No.	Location	Parameter	Limits	Units	2025-05-20	2025-05-19	2025-05-20	2025-05-21	
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-
2		Diameter	-	m	6.7	6.7	6.7	6.7	-
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-
4		Stack Temperature	-	°C	116	113	114	112	-
5		Stack Pressure	-	mmHg	726	728	724	727	-
6		Velocity	-	m/s	11.3	12.0	11.1	10.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1049998	1126804	1033888	1005959	
8		Particulate Matter (PM)	50	mg/Nm ³	2.49	2.57	4.92	2.39	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.064	0.051	0.073	0.044	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.310	0.278	0.371	0.247	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	143	137	157	146	
*Instrument Used - Vavubodhan Stack Sampler K#									
Measured by Portable Combustion Analyser									

*Instrument Used - Vayubodhan Stack Sampler Kit

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Dr. Subba Reddy Mallampati
Manager - Environment

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					Issue Date:	2025-06-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-05-05					Analysis Completion date :- 2025-05-16				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-05-03	2025-05-03	2025-05-03	2025-05-03	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	59	62	40	62	-
5		Stack Pressure	-	mmHg	729	730	729	729	-
6		Velocity	-	m/s	11.2	6.7	6.8	10.2	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	88383	2102	2280	79771	
8		Particulate Matter (PM)	50	mg/Nm ³	16.6	13.8	9.4	15.9	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.056	0.064	0.039	0.059	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	8.6	48.6	22.9	5.7	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	6.2	2.1	ND	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.014	0.014	0.011	0.010	CARB 429

Instrument Used - Vavubodhan Stack Sampler Kit

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/06982/PL-1			
					Issue Date:	2025-07-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1									
Analysis starting date :- 2025-06-13					Analysis Completion date :- 2025-06-20				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;									
TEST RESULTS									
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method
S No.	Location	Parameter	Limits	Units	2025-06-17	2025-06-12	2025-06-23	2025-06-17	
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-
2		Diameter	-	m	6.7	6.7	6.7	6.7	-
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-
4		Stack Temperature	-	°C	110	110	108	108	-
5		Stack Pressure	-	mmHg	724	726	719	724	-
6		Velocity	-	m/s	10.8	10.0	10.8	10.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1016451	943758	1014730	1031248	
8		Particulate Matter (PM)	50	mg/Nm ³	3.79	3.05	2.50	2.81	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.083	0.058	0.072	0.058	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.347	0.262	0.282	0.267	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	123	143	149	137	
Measured by Portable Combustion Analyser									

*Instrument Used - Vayubodhan Stack Sampler Kit

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					Issue Date:	2025-07-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-06-23					Analysis Completion date :- 2025-07-03				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-06-21	2025-06-21	2025-06-21	2025-06-21	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	40	62	50	60	-
5		Stack Pressure	-	mmHg	725	725	725	724	-
6		Velocity	-	m/s	10.7	9.4	9.7	8.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	89072	2929	3135	67979	
8		Particulate Matter (PM)	50	mg/Nm ³	6.9	10.2	8.7	13.6	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.049	0.058	0.042	0.039	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	5.7	37.2	25.7	2.9	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	2.1	4.1	ND	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.012	0.015	0.012	0.013	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/09740/PL-1			
					Issue Date:	2025-08-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1									
Analysis starting date :- 2025-07-11					Analysis Completion date :- 2025-07-30				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;									
TEST RESULTS									
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method
S No.	Location	Parameter	Limits	Units	2025-07-12	2025-07-10	2025-07-28	2025-06-17	
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-
2		Diameter	-	m	6.7	6.7	6.7	6.7	-
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-
4		Stack Temperature	-	°C	108	104	109	110	-
5		Stack Pressure	-	mmHg	725	723	721	726	-
6		Velocity	-	m/s	11.1	10.9	11.1	10.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1051620	1040750	1043080	1019259	
8		Particulate Matter (PM)	30	mg/Nm ³	3.24	2.85	2.83	2.82	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.087	0.065	0.058	0.071	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.311	0.341	0.270	0.276	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	114	129	140	137	
*Instrument Used - Vayubodhan Stack Sampler Kit Measured by Portable Combustion Analyser									

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/09740/GAP-1			
					Issue Date:	2025-08-05			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-07-07					Analysis Completion date :- 2025-07-18				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-07-05	2025-07-05	2025-07-05	2025-07-05	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	45	57	52	58	-
5		Stack Pressure	-	mmHg	724	723	723	724	-
6		Velocity	-	m/s	8.4	7.9	7.9	8.2	-
7		Volumetric Flow Rate	-	Nm ³ /Hr	68731	2492	2530	64460	USEPA M-2
8		Particulate Matter (PM)	30	mg/Nm ³	8.2	9.1	6.7	12.9	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.049	0.036	0.034	0.043	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	8.6	37.2	31.5	11.4	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	6.2	12.3	2.1	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.016	0.013	0.011	0.014	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM limit as per the CTE No. 2207/TS/CECB/2022



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/11867/PL-1			
					Issue Date:	2025-09-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1									
Analysis starting date :- 2025-08-07					Analysis Completion date :- 2025-08-12				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ ;									
TEST RESULTS									
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method
S No.	Location	Parameter	Limits	Units	2025-08-06	2025-08-05	2025-08-07	2025-08-07	
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-
2		Diameter	-	m	6.7	6.7	6.7	6.7	-
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-
4		Stack Temperature	-	°C	110	110	110	115	-
5		Stack Pressure	-	mmHg	728	726	724	727	-
6		Velocity	-	m/s	10.9	10.5	10.7	10.5	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1031530	990946	1007040	979524	
8		Particulate Matter (PM)	30	mg/Nm ³	2.66	2.99	3.57	2.80	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.091	0.068	0.069	0.057	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.285	0.241	0.280	0.221	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	152	134	157	134	Measured by Portable Combustion Analyser

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



Dr. Subba Reddy Mallampati
Manager - Environment

ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/11867/GAP-1			
					Issue Date:	2025-09-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-08-18					Analysis Completion date :- 2025-08-27				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-08-16	2025-08-16	2025-08-16	2025-08-16	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	42	53	47	57	-
5		Stack Pressure	-	mmHg	727	726	726	726	-
6		Velocity	-	m/s	9.1	8.2	7.4	7.2	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	75479	2629	2417	56927	
8		Particulate Matter (PM)	30	mg/Nm ³	13.7	18.8	11.2	15.2	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.079	0.047	0.041	0.063	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	5.7	48.6	17.2	8.6	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	2.1	4.1	2.1	2.1	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.014	0.017	0.013	0.015	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM limit as per the CTE No. 2207/TS/CECB/2022



Dr. Subba Reddy Mallampalli
Manager - Environment

ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/14073/PL-1				
					Issue Date:	2025-10-04				
					P.O No:	8500005780				
					P.O Date:	2022-06-29				
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 1										
Analysis starting date :- 2025-09-02					Analysis Completion date :- 2025-09-13					
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO2;										
TEST RESULTS										
POTLINE - 1					POTLINE - 1 FTP - 1	POTLINE - 1 FTP - 2	POTLINE - 1 FTP - 3	POTLINE - 1 FTP - 4	Method	
S No.	Location	Parameter	Limits	Units	2025-09-19	2025-09-03	2025-09-19	2025-09-01		
1	POTLINE - 1	Height of the stack	-	m	80	80	80	80	-	
2		Diameter	-	m	6.7	6.7	6.7	6.7	-	
3		Area of Cross section	-	m ²	35.271	35.271	35.271	35.271	-	
4		Stack Temperature	-	°C	110	110	112	107	-	
5		Stack Pressure	-	mmHg	727	724	727	725	-	
6		Velocity	-	m/s	10.1	9.8	10.2	10.0	USEPA M-2	
7		Volumetric Flow Rate	-	Nm ³ /Hr	954509	922335	958952	949899		
8		Particulate Matter (PM)	30	mg/Nm ³	2.73	2.97	3.08	3.92	USEPA M-5	
9		Particulate Fluoride	-	mg/Nm ³	0.098	0.083	0.063	0.095	USEPA M-13B	
10		Gaseous Fluoride	-	mg/Nm ³	0.305	0.253	0.239	0.284		
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	117	126	120	132	Measured by Portable Combustion Analyser	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down


VIMTA LABS
REGD. No- DL 33004/99
Dr. Subba Reddy Mallampati
Manager - Environment

Sensitivity: Internal (C3)

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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/14073/GAP-1			
					Issue Date:	2025-10-04			
					P.O No:	8500005780			
					P.O Date:	2022-06-29			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 1									
Analysis starting date :- 2025-09-15					Analysis Completion date :- 2025-09-26				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 1					GAP - 1 D 6	GAP - 1 D 7	GAP - 1 D 8	GAP - 1 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-09-13	2025-09-13	2025-09-13	2025-09-13	
1	GAP - 1	Height of the stack	-	m	60	60	60	60	-
2		Diameter	-	m	1.8	0.36	0.36	1.8	-
3		Area of Cross section	-	m ²	2.546	0.102	0.102	2.546	-
4		Stack Temperature	-	°C	38	60	44	57	-
5		Stack Pressure	-	mmHg	729	727	728	728	-
6		Velocity	-	m/s	8.0	8.5	6.0	6.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	67394	2672	1984	53913	
8		Particulate Matter (PM)	30	mg/Nm ³	12.4	14.8	9.5	17.1	USEPA M-5
9		Gaseous Fluoride	-	mg/Nm ³	0.062	0.058	0.044	0.071	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	2.9	20.0	8.6	2.9	Measured by Portable Combustion Analyser
11		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	2.1	2.1	ND	
12		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
13		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
14		PAH	2	mg/Nm ³	0.016	0.014	0.010	0.013	CARB 429

Instrument Used - Vayubodhan Stack Sampler K#

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM limit as per the CTE No. 2207/TS/CECB/2022



Sensitivity: Internal (C3)

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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/02532/006
	Issue Date:	2025-05-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : COAL GATE									
Sampling Date			2025-04-03	2025-04-05	2025-04-09	2025-04-11	2025-04-15	2025-04-17	2025-04-21	2025-04-23	2025-04-27	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	23.2	30.5	35.8	38.8	36.7	21.9	32.8	37.1	36.6	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	16.2	17.7	15.8	24.2	19.8	21.1	18.6	20.3	26.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	59.3	61.8	63.1	65.3	58.4	60.7	62.5	64.8	56.9	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	23.6	27.3	19.0	21.9	17.6	29.1	26.0	24.7	20.9	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	3.7	3.1	4.1	4.6	5.4	5.2	2.0	2.2	2.6	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.6	3.2	6.4	5.8	4.1	3.9	4.6	4.2	5.2	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	384	326	271	423	368	324	419	377	392	NDIR Spectroscopy Method
Ozone	µg/m ³	100	7.8	9.4	8.0	9.3	6.4	8.6	7.3	5.6	6.5	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)								Report No.:		VLL/VLS/25-26/02532/003			
								Issue Date:		2025-05-05			
								P.O.No:		8500005780			
								P.O. Date:		2022-06-29			
AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)													
Analysis starting date :- 2025-04-05								Analysis Completion date :- 2025-05-05					
Tests required: Sulphur Dioxide (SO ₂), Nitrogen Dioxide (NO _x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH3), Benzene (C ₆ H ₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.													
TEST RESULTS													
Parameters		Units	Limits	AAQ Location : GAP & BAKE OVEN									
Sampling Date			2025-04-03	2025-04-05	2025-04-09	2025-04-11	2025-04-15	2025-04-17	2025-04-21	2025-04-23	2025-04-27	Method	
Sulphur Dioxide (SO ₂)	µg/m ³	80	32.9	33.1	38.6	22.2	33.3	29.6	25.0	28.9	33.8	Improved West and Gaeke Method	
Nitrogen Dioxide (NO _x)	µg/m ³	80	17.5	20.5	19.4	21.9	23.1	18.2	22.4	20.7	22.7	Modified Jacob & Hochheiser Method	
Particulate Matter (PM10)	µg/m ³	100	64.7	61.9	57.6	63.5	68.2	59.1	62.1	65.8	67.7	Gravimetric Method	
Particulate Matter (PM2.5)	µg/m ³	60	24.2	20.8	18.8	22.5	27.2	18.5	21.1	24.0	23.6	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	4.9	3.8	5.1	4.5	5.9	3.3	3.4	2.6	2.9	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method	
Nickel as Ni	ng/m ³	20	4.7	4.2	5.8	3.6	3.9	4.4	4.8	3.1	4.6	AAS/ICP Method	
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method	
Carbon Monoxide	µg/m ³	2000	363	482	327	321	378	406	385	319	354	NDIR Spectroscopy Method	
Ozone	µg/m ³	100	8.2	10.5	9.6	7.9	6.5	8.9	6.6	8.1	6.1	UV photometric method	



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/02532/002
	Issue Date:	2025-05-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS												
Parameters	Units	Limits	AAQ Location : NEW ETP									
Sampling Date			2025-04-03	2025-04-05	2025-04-09	2025-04-11	2025-04-15	2025-04-17	2025-04-21	2025-04-23	2025-04-27	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	31.0	36.4	26.3	34.9	26.1	24.6	22.1	27.8	28.4	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	12.1	16.1	13.6	18.0	17.0	14.4	13.8	15.1	18.3	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	63.7	59.3	56.6	52.8	61.4	57.5	65.8	60.1	54.6	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	22.8	19.4	17.0	15.7	20.6	17.4	24.1	21.9	18.5	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	3.4	3.1	2.1	2.4	2.7	2.0	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	3.4	5.2	2.8	4.6	3.1	4.4	3.8	4.3	2.8	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	317	269	384	412	363	402	286	328	287	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.2	5.3	7.3	5.1	8.1	6.4	4.7	5.8	4.4	UV photometric method



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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)		Report No.:	VLL/VLS/25-26/04458/003
		Issue Date:	2025-06-04
		P.O.No:	8500005780
		P.O. Date:	2022-06-29
AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)			
Analysis starting date :- 2025-05-03		Analysis Completion date :- 2025-06-03	
Tests required: Sulphur Dioxide (SO ₂), Nitrogen Dioxide (NO _x), Particulate Matter (PM ₁₀), Particulate Matter (PM _{2.5}), Ammonia (NH ₃), Benzene (C ₆ H ₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.			
TEST RESULTS			
AAQ Location : GAP & BAKE OVEN			
Parameters	Units	Limits	
Sampling Date			
Sulphur Dioxide (SO ₂)	µg/m ³	80	2025-05-01 23.6 2025-05-07 25.4 2025-05-09 36.2 2025-05-13 37.7 2025-05-15 22.6 2025-05-19 40.0 2025-05-21 29.4 2025-05-25 37.8 2025-05-27 22.3 Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	2025-05-01 19.1 2025-05-07 21.1 2025-05-09 18.5 2025-05-13 19.5 2025-05-15 17.3 2025-05-19 17.9 2025-05-21 16.6 2025-05-25 14.9 2025-05-27 15.8 Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	2025-05-01 60.6 2025-05-07 62.7 2025-05-09 62.1 2025-05-13 59.4 2025-05-15 60.1 2025-05-19 61.4 2025-05-21 56.4 2025-05-25 58.4 2025-05-27 47.8 Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	2025-05-01 26.5 2025-05-07 21.9 2025-05-09 24.4 2025-05-13 25.5 2025-05-15 22.2 2025-05-19 20.6 2025-05-21 24.7 2025-05-25 22.2 2025-05-27 25.5 Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2025-05-01 2.4 2025-05-07 2.8 2025-05-09 2.0 2025-05-13 1.9 2025-05-15 2.2 2025-05-19 2.0 2025-05-21 2.3 2025-05-25 2.5 2025-05-27 2.1 Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	2025-05-01 <0.01 2025-05-07 <0.01 2025-05-09 <0.01 2025-05-13 <0.01 2025-05-15 <0.01 2025-05-19 <0.01 2025-05-21 <0.01 2025-05-25 <0.01 2025-05-27 <0.01 Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	2025-05-01 <0.01 2025-05-07 <0.01 2025-05-09 <0.01 2025-05-13 <0.01 2025-05-15 <0.01 2025-05-19 <0.01 2025-05-21 <0.01 2025-05-25 <0.01 2025-05-27 <0.01 Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	2025-05-01 <1.0 2025-05-07 <1.0 2025-05-09 <1.0 2025-05-13 <1.0 2025-05-15 <1.0 2025-05-19 <1.0 2025-05-21 <1.0 2025-05-25 <1.0 2025-05-27 <1.0 AAS/ICP Method
Nickel as Ni	ng/m ³	20	2025-05-01 4.1 2025-05-07 6.7 2025-05-09 5.6 2025-05-13 7.3 2025-05-15 6.9 2025-05-19 5.2 2025-05-21 5.8 2025-05-25 6.3 2025-05-27 7.6 AAS/ICP Method
Lead as Pb	µg/m ³	1	2025-05-01 <0.01 2025-05-07 <0.01 2025-05-09 <0.01 2025-05-13 <0.01 2025-05-15 <0.01 2025-05-19 <0.01 2025-05-21 <0.01 2025-05-25 <0.01 2025-05-27 <0.01 AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	2025-05-01 341 2025-05-07 389 2025-05-09 274 2025-05-13 308 2025-05-15 366 2025-05-19 297 2025-05-21 245 2025-05-25 372 2025-05-27 282 NDIR Spectroscopy Method
Ozone	µg/m ³	100	2025-05-01 5.4 2025-05-07 4.1 2025-05-09 4.9 2025-05-13 6.4 2025-05-15 5.5 2025-05-19 6.6 2025-05-21 5.3 2025-05-25 6.4 2025-05-27 4.7 UV photometric method



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ISSUED TO:

M/s. Bharat Aluminium Company Limited,
KORBA (C.G.)

Report No.:	VLL/VLS/25-26/04458/006
Issue Date:	2025-06-04
P.O.No:	8500005780
P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : COAL GATE									
Sampling Date			2025-05-01	2025-05-07	2025-05-09	2025-05-13	2025-05-15	2025-05-19	2025-05-21	2025-05-25	2025-05-27	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	30.5	35.6	26.8	36.4	33.2	39.7	31.0	34.0	29.1	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	16.5	18.4	20.9	17.0	18.9	22.1	19.5	16.0	13.5	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	61.9	61.9	62.5	62.6	58.4	53.6	61.5	56.8	51.2	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	20.5	26.1	23.1	27.9	23.3	25.3	27.0	20.5	24.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.0	2.7	1.8	1.3	1.9	2.5	2.1	1.7	2.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	6.4	5.8	6.1	7.4	4.9	5.6	6.9	7.2	6.5	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	349	314	375	283	251	388	296	272	337	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.8	3.0	5.7	5.1	5.9	5.7	6.5	4.2	5.8	UV photometric method



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**ISSUED TO:**

M/s. Bharat Aluminium Company Limited,
KORBA (C.G.)

Report No.:	VLL/VLS/25-26/04458/002
Issue Date:	2025-06-04
P.O.No:	8500005780
P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

TEST RESULTS													
Parameters	Units	Limits	AAQ Location : NEW ETP										
Sampling Date			2025-05-01	2025-05-07	2025-05-09	2025-05-13	2025-05-15	2025-05-19	2025-05-21	2025-05-25	2025-05-27	Method	
Sulphur Dioxide (SO ₂)	µg/m ³	80	30.8	25.9	29.6	21.1	28.5	27.6	29.9	17.2	16.7	Improved West and Gaeke Method	
Nitrogen Dioxide (NO _x)	µg/m ³	80	15.5	18.2	16.7	19.5	15.3	14.3	12.7	11.9	9.7	Modified Jacob & Hochheiser Method	
Particulate Matter (PM10)	µg/m ³	100	57.4	63.8	60.4	56.8	59.7	54.9	61.0	55.8	51.0	Gravimetric Method	
Particulate Matter (PM2.5)	µg/m ³	60	17.0	21.7	19.1	16.3	19.0	15.8	20.7	17.8	16.3	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	1.7	2.2	1.9	1.7	1.6	1.2	1.8	1.5	2.0	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method	
Nickel as Ni	ng/m ³	20	3.7	5.3	4.9	6.6	3.2	5.9	6.2	4.7	5.1	AAS/ICP Method	
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method	
Carbon Monoxide	µg/m ³	2000	268	247	388	326	233	251	364	282	318	NDIR Spectroscopy Method	
Ozone	µg/m ³	100	3.9	2.9	3.2	4.2	3.8	4.4	4.9	2.1	3.2	UV photometric method	



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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/06982/006
	Issue Date:	2025-07-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : COAL GATE								Method
			2025-06-05	2025-06-07	2025-06-11	2025-06-13	2025-06-17	2025-06-19	2025-06-23	2025-06-25	
Sulphur Dioxide (SO ₂)	µg/m ³	80	26.0	31.4	33.6	28.8	39.8	36.9	38.4	32.7	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	19.0	20.4	19.0	17.9	18.3	16.2	24.1	18.5	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	63.3	68.2	56.4	57.4	52.8	54.2	55.9	51.2	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	25.2	29.5	23.6	21.7	17.1	19.3	20.6	22.8	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	4.6	3.9	2.5	3.1	2.1	2.8	3.1	2.0	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.4	7.3	7.1	5.9	6.3	6.8	5.8	6.5	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	349	314	375	283	251	388	296	272	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.3	4.8	4.2	5.0	6.2	5.5	4.7	5.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/06982/003
	Issue Date:	2025-07-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : GAP & BAKE OVEN								Method
			2025-06-05	2025-06-07	2025-06-11	2025-06-13	2025-06-17	2025-06-19	2025-06-23	2025-06-25	
Sampling Date											
Sulphur Dioxide (SO ₂)	µg/m ³	80	32.3	29.7	33.1	36.2	31.8	35.0	29.0	34.7	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	18.9	23.2	24.4	19.5	22.5	20.3	25.9	20.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	63.3	64.5	58.5	58.3	51.8	56.4	57.8	57.2	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	27.0	23.6	26.1	21.0	18.5	22.7	20.5	21.2	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	4.3	3.1	2.5	2.0	2.5	2.6	3.7	2.9	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	5.9	7.3	6.6	5.2	4.7	3.4	5.2	7.1	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	361	264	326	382	247	271	358	342	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.6	5.2	7.1	4.6	3.5	6.2	5.0	4.5	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/06982/002
	Issue Date:	2025-07-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP								Method
			2025-06-05	2025-06-07	2025-06-11	2025-06-13	2025-06-17	2025-06-19	2025-06-23	2025-06-25	
Sampling Date											
Sulphur Dioxide (SO ₂)	µg/m ³	80	23.6	21.0	33.4	24.8	30.5	37.8	30.2	34.3	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	13.2	14.5	16.6	12.9	17.6	19.9	21.6	16.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	68.8	53.2	55.2	61.5	52.6	53.5	53.1	54.8	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	26.2	20.5	24.1	21.4	16.2	18.2	19.4	17.4	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	1.7	2.4	1.8	2.3	2.6	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.6	5.1	3.8	5.8	6.3	4.8	4.4	6.5	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	276	321	347	263	315	307	296	229	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.3	3.9	3.3	5.1	6.2	4.9	4.4	3.2	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/09740/006
	Issue Date:	2025-08-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

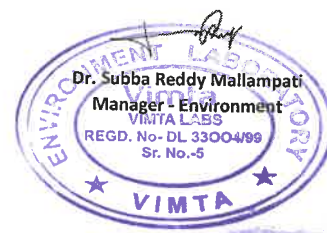
TEST RESULTS

AAQ Location : COAL GATE

Parameters	Units	Limits											
Sampling Date			2025-07-03	2025-07-05	2025-07-09	2025-07-11	2025-07-15	2025-07-17	2025-07-21	2025-07-23	2025-07-28	Method	
Sulphur Dioxide (SO ₂)	µg/m ³	80	39.8	33.9	46.0	45.9	37.5	29.4	41.6	28.5	36.9	Improved West and Gaeke Method	
Nitrogen Dioxide (NO _x)	µg/m ³	80	21.7	23.5	20.1	17.4	10.0	12.5	8.7	11.3	11.2	Modified Jacob & Hochheiser Method	
Particulate Matter (PM10)	µg/m ³	100	46.6	45.8	54.3	42.1	53.6	54.7	50.7	54.8	50.6	Gravimetric Method	
Particulate Matter (PM2.5)	µg/m ³	60	21.2	17.7	26.9	21.6	24.8	18.3	22.7	16.4	13.2	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	2.2	2.6	2.4	3.9	1.4	1.5	1.1	1.7	2.0	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method	
Nickel as Ni	ng/m ³	20	6.4	4.8	4.4	5.9	6.1	5.8	5.3	6.6	4.7	AAS/ICP Method	
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method	
Carbon Monoxide	µg/m ³	2000	291	377	405	258	384	358	264	248	396	NDIR Spectroscopy Method	
Ozone	µg/m ³	100	6.0	5.7	11.1	10.7	2.5	5.2	6.2	6.5	4.0	UV photometric method	



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)								Report No.:		VLL/VLS/25-26/09740/003			
								Issue Date:		2025-08-05			
								P.O.No:		8500005780			
								P.O. Date:		2022-06-29			
AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)													
Analysis starting date :- 2025-07-05								Analysis Completion date :- 2025-08-04					
Tests required: Sulphur Dioxide (SO ₂), Nitrogen Dioxide (NO _x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH ₃), Benzene (C ₆ H ₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.													
TEST RESULTS													
Parameters		Units	Limits	AAQ Location : GAP & BAKE OVEN									
Sampling Date				2025-07-03	2025-07-05	2025-07-09	2025-07-11	2025-07-15	2025-07-17	2025-07-21	2025-07-23	2025-07-28	Method
Sulphur Dioxide (SO ₂)		µg/m ³	80	24.9	33.0	33.1	28.6	31.6	33.3	37.9	40.1	28.4	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)		µg/m ³	80	22.7	25.1	18.5	20.2	13.1	10.2	14.8	11.0	13.7	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)		µg/m ³	100	48.8	47.4	53.3	48.4	51.2	53.0	57.8	54.6	51.8	Gravimetric Method
Particulate Matter (PM2.5)		µg/m ³	60	11.5	14.4	27.6	23.9	18.3	20.7	22.8	17.4	19.6	Gravimetric Method
Ammonia (NH ₃)		µg/m ³	400	2.8	3.7	2.8	3.0	2.2	1.8	1.5	2.1	2.7	Indophenol Blue Method
Benzene (C ₆ H ₆)		µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase		ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As		ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni		ng/m ³	20	5.3	6.8	6.1	5.9	4.7	5.4	6.9	6.2	5.8	AAS/ICP Method
Lead as Pb		µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide		µg/m ³	2000	401	349	367	393	431	285	352	398	269	NDIR Spectroscopy Method
Ozone		µg/m ³	100	5.4	6.6	8.1	7.9	5.1	6.0	7.2	8.1	7.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/09740/002
	Issue Date:	2025-08-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP									
Sampling Date			2025-07-03	2025-07-05	2025-07-09	2025-07-11	2025-07-15	2025-07-17	2025-07-21	2025-07-23	2025-07-28	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	31.9	36.2	28.7	24.6	25.3	34.6	31.0	28.7	11.4	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	15.8	17.4	14.0	12.3	8.2	9.9	9.0	10.7	11.7	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	46.3	46.2	52.5	43.7	53.1	53.7	53.1	52.0	55.4	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	12.2	15.7	19.3	13.9	22.7	20.6	18.4	14.9	17.4	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.5	1.7	1.3	2.0	0.9	1.3	1.3	1.8	2.1	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.9	6.2	5.8	5.4	6.1	4.7	5.5	6.2	5.7	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	293	385	324	309	297	352	339	381	276	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.1	5.2	4.3	8.3	4.6	5.1	4.8	5.7	4.4	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/11867/006
	Issue Date:	2025-09-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : COAL GATE									
Sampling Date			2025-08-01	2025-08-07	2025-08-09	2025-08-13	2025-08-16	2025-08-19	2025-08-21	2025-08-25	2025-08-27	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	41.0	27.7	28.2	38.5	33.3	37.6	29.2	40.9	35.9	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	10.9	12.1	16.5	19.7	17.2	13.8	16.6	19.5	14.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	59.3	52.8	54.9	65.8	58.1	56.7	57.6	55.9	61.5	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	22.0	16.9	22.0	25.9	21.0	21.4	19.0	21.9	24.1	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.3	1.7	1.2	2.4	2.2	1.0	1.7	2.3	1.9	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.9	6.3	6.1	5.9	5.4	6.7	4.2	6.7	6.2	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	248	372	294	253	277	256	315	283	251	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.8	4.6	6.4	6.4	6.1	4.8	2.4	5.6	3.1	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/11867/003
	Issue Date:	2025-09-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : GAP & BAKE OVEN									Method
			2025-08-01	2025-08-07	2025-08-09	2025-08-13	2025-08-16	2025-08-19	2025-08-21	2025-08-25	2025-08-27	
Sulphur Dioxide (SO ₂)	µg/m ³	80	37.2	26.8	41.3	32.3	32.8	28.5	39.4	34.1	36.8	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	13.9	15.4	11.4	14.8	14.0	17.7	15.0	17.9	16.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	56.8	54.2	64.8	57.4	60.3	58.7	57.1	55.6	59.3	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	20.7	18.7	23.2	20.6	23.6	21.9	22.6	21.0	23.2	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.8	2.0	1.4	2.9	2.3	2.1	1.5	2.0	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	5.9	7.2	6.4	6.6	5.1	4.8	6.9	5.4	5.8	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	358	271	238	296	354	247	270	238	314	NDIR Spectroscopy Method
Ozone	µg/m ³	100	7.5	5.3	6.8	4.8	5.5	3.6	5.7	6.0	4.7	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/11867/002
	Issue Date:	2025-09-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP									Method
			2025-08-01	2025-08-07	2025-08-09	2025-08-13	2025-08-16	2025-08-19	2025-08-21	2025-08-25	2025-08-27	
Sulphur Dioxide (SO ₂)	µg/m ³	80	32.3	30.3	27.8	28.7	31.3	38.1	24.3	36.9	26.5	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	9.6	13.6	10.7	12.2	10.8	15.3	13.1	11.4	14.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	47.6	55.8	56.2	63.2	50.2	49.1	46.3	58.2	61.4	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	17.3	22.7	25.4	27.2	20.9	18.4	18.6	22.0	23.5	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	1.5	2.4	1.9	1.8	1.7	1.5	1.3	1.0	1.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	5.2	6.7	4.9	4.2	5.6	5.1	4.4	6.3	5.8	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	294	336	242	301	358	283	259	318	271	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.2	3.1	4.9	2.1	4.2	2.4	4.1	4.6	3.4	UV photometric method



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/14073/006
	Issue Date:	2025-10-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : COAL GATE								Method
			2025-09-04	2025-09-06	2025-09-10	2025-09-12	2025-09-16	2025-09-18	2025-09-22	2025-09-24	
Sulphur Dioxide (SO ₂)	µg/m ³	80	29.5	40.3	36.8	34.5	39.0	33.1	38.3	39.0	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	16.3	15.5	16.4	14.2	19.7	17.6	20.2	18.5	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	56.1	60.9	53.6	50.9	54.7	52.4	62.8	55.4	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	20.1	22.7	16.1	17.2	18.5	16.4	23.1	19.8	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	3.5	2.3	1.2	2.3	2.6	3.3	3.7	3.2	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	5.4	7.8	5.3	6.1	6.8	5.9	5.3	6.7	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	317	348	249	402	448	361	325	374	NDIR Spectroscopy Method
Ozone	µg/m ³	100	5.2	4.1	4.7	5.1	5.7	6.5	3.6	7.4	UV photometric method

Dr. Subba Reddy Mallampati
Manager - Environment
REGD. No- DL 33004/99
Sr. No.-5
VIMTA

Sensitivity: Internal (C3)

ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/14073/003
	Issue Date:	2025-10-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT GAP & BAKE OVEN ROAD (BALCO)

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : GAP & BAKE OVEN								Method
			2025-09-04	2025-09-06	2025-09-10	2025-09-12	2025-09-16	2025-09-18	2025-09-22	2025-09-24	
Sulphur Dioxide (SO ₂)	µg/m ³	80	30.5	27.8	28.7	34.7	33.3	38.1	40.5	36.0	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	17.9	16.7	15.7	16.5	17.3	20.2	18.3	22.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	59.2	54.0	69.3	57.7	54.1	51.8	62.4	56.3	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	20.1	16.7	24.3	21.1	18.6	16.6	22.5	18.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	3.4	2.6	2.4	1.9	3.7	2.8	3.0	2.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	6.8	7.3	4.9	5.7	6.2	6.9	4.1	5.6	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	416	268	396	408	342	326	271	359	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.8	5.8	4.2	6.3	7.6	6.3	4.8	6.8	UV photometric method



Sensitivity: Internal (C3)

ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/14073/002
	Issue Date:	2025-10-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP								Method
			2025-09-04	2025-09-06	2025-09-10	2025-09-12	2025-09-16	2025-09-18	2025-09-22	2025-09-24	
Sulphur Dioxide (SO ₂)	µg/m ³	80	27.2	32.9	35.5	30.7	28.2	37.0	32.2	26.6	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	14.5	13.2	13.1	18.1	15.4	16.2	15.9	17.6	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	51.2	54.8	49.4	57.1	46.7	53.9	50.2	48.5	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	16.4	18.7	14.8	21.1	14.2	17.6	15.6	13.6	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.3	2.0	1.7	2.6	2.2	3.1	2.4	3.4	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.7	6.4	5.8	5.2	4.4	6.1	5.9	6.3	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	241	362	284	395	418	296	385	369	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.3	3.9	5.4	4.8	5.3	4.8	2.6	4.0	UV photometric method



Sensitivity: Internal (C3)

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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)			Report No.:	VLL/VLS/25-26/02532/PL-F			
			Issue Date:	2025-05-05			
			P.O.No:	8500005780			
			P.O. Date:	2022-06-29			
FUGITIVE EMISSION MONITORING AT POT LINE - 1							
Registration Date: 2025-04-11			Sampling Date:		2025-04-10		
Analysis starting date : 2025-04-11			Analysis Completion date:		2025-04-12		
Test Required :- PM, Fluoride;							
TEST RESULTS							
S. No.	Parameter	Units	POT LINE - 1				
			Section 1	Section 2	Section 7	Section 8	
			2025-04-10	2025-04-11	2025-04-11	2025-04-10	
1	PM	$\mu\text{g}/\text{m}^3$	482	467	497	456	
2	Fluoride	$\mu\text{g}/\text{m}^3$	366	403	393	415	

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.

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			Issue Date:		2025-06-04	
			P.O.No:		8500005780	
			P.O. Date:		2022-06-29	
FUGITIVE EMISSION MONITORING AT POT LINE - 1						
Registration Date: 2025-05-06			Sampling Date: 2025-05-05			
Analysis starting date : 2025-05-06			Analysis Completion date: 2025-05-08			
Test Required :- PM, Fluoride;						
TEST RESULTS						
S. No.	Parameter	Units	POT LINE -1			
			Section 1	Section 2	Section 7	Section 8
			2025-05-06	2025-05-05	2025-05-05	2025-05-06
1	PM	$\mu\text{g}/\text{m}^3$	496	456	480	467
2	Fluoride	$\mu\text{g}/\text{m}^3$	356	403	392	378

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.



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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)			Report No.: VLL/VLS/25-26/06982/PL-F			
			Issue Date: 2025-07-05			
			P.O.No: 8500005780			
			P.O. Date: 2022-06-29			
FUGITIVE EMISSION MONITORING AT POT LINE - 1						
Registration Date: 2025-06-17		Sampling Date: 2025-06-16				
Analysis starting date : 2025-06-17		Analysis Completion date: 2025-06-19				
Test Required :- PM, Fluoride;						
TEST RESULTS						
S. No.	Parameter	Units	POT LINE - 1			
			Section 1	Section 2	Section 7	Section 8
			2025-06-16	2025-06-17	2025-06-17	2025-06-16
1	PM	$\mu\text{g}/\text{m}^3$	460	469	450	483
2	Fluoride	$\mu\text{g}/\text{m}^3$	307	324	313	344

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.


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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)			Report No.:		VLL/VLS/25-26/09740/PL-F	
			Issue Date:		2025-08-05	
			P.O.No:		8500005780	
			P.O. Date:		2022-06-29	
FUGITIVE EMISSION MONITORING AT POT LINE - 1						
Registration Date:		2025-07-12		Sampling Date:		2025-07-10
Analysis starting date :		2025-07-12		Analysis Completion date:		2025-07-12
Test Required :- PM, Fluoride;						
TEST RESULTS						
S. No.	Parameter	Units	POT LINE -1			
			Section 1	Section 2	Section 7	Section 8
			2025-07-10	2025-07-11	2025-07-11	2025-07-10
1	PM	µg/m ³	485	469	451	453
2	Fluoride	µg/m ³	337	425	371	353

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.


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			Issue Date: 2025-09-04			
			P.O.No: 8500005780			
			P.O. Date: 2022-06-29			
FUGITIVE EMISSION MONITORING AT POT LINE - 1						
Registration Date: 2025-08-09		Sampling Date: 2025-08-08				
Analysis starting date : 2025-08-09		Analysis Completion date: 2025-08-11				
Test Required :- PM, Fluoride;						
TEST RESULTS						
S. No.	Parameter	Units	POT LINE - 1			
			Section 1	Section 2	Section 7	Section 8
			2025-08-08	2025-08-09	2025-08-09	2025-08-08
1	PM	$\mu\text{g}/\text{m}^3$	465	478	490	484
2	Fluoride	$\mu\text{g}/\text{m}^3$	335	345	374	357

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.



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	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FUGITIVE EMISSION MONITORING AT POT LINE - 1

Registration Date: 2025-09-16

Sampling Date: 2025-09-15

Analysis starting date : 2025-09-16

Analysis Completion date: 2025-09-18

Test Required :- PM, Fluoride;

TEST RESULTS

S. No.	Parameter	Units	POT LINE - 1			
			Section 1	Section 2	Section 7	Section 8
			2025-09-15	2025-09-16	2025-09-16	2025-09-15
1	PM	$\mu\text{g}/\text{m}^3$	458	493	475	482
2	Fluoride	$\mu\text{g}/\text{m}^3$	353	335	286	322

Remarks: Instrument Used – Handy Sampler & APM 460 BL Respirable Dust Sampler.

**Dr. Subba Reddy Mallampati**
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Sensitivity: Internal (CS)

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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/02532/Forage
	Issue Date:	2025-05-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FORAGE FLUORIDE

Registration Date: 2025-04-10

Sampling Date:

2025-04-08

Analysis starting date: 2025-04-10

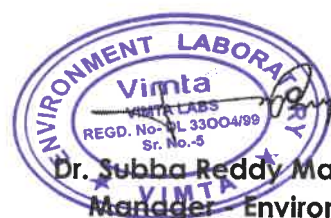
Analysis Completion date:

2025-04-16

Test Required :- Fluoride;

TEST RESULTS

S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	36
2	Near Parsabhata	PPM	80	21
3	Near Lal ghat	PPM	80	28
4	Near check post	PPM	80	18
5	Near Sharma petrol pump	PPM	80	16
6	Bhadrapara	PPM	80	12
7	Risdi	PPM	80	14
8	Rampur	PPM	80	11
9	Manikpur	PPM	80	13
10	jambahar	PPM	80	17
11	Rumgarha	PPM	80	20
12	Gerwan	PPM	80	14



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	Issue Date:	2025-06-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FORAGE FLUORIDE

Registration Date: 2025-05-09

Sampling Date:

2025-05-07

Analysis starting date: 2025-05-09

Analysis Completion date:

2025-05-16

Test Required :- Fluoride;

TEST RESULTS

S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	42
2	Near Parsabhata	PPM	80	27
3	Near Lal ghat	PPM	80	31
4	Near check post	PPM	80	22
5	Near Sharma petrol pump	PPM	80	19
6	Bhadrapara	PPM	80	14
7	Risdi	PPM	80	18
8	Rampur	PPM	80	12
9	Manikpur	PPM	80	15
10	jambahar	PPM	80	11
11	Rumgarha	PPM	80	17
12	Gerwan	PPM	80	16



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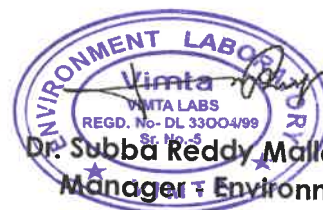
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		Issue Date:	2025-07-05	
		P.O.No:	8500005780	
		P.O. Date:	2022-06-29	
FORAGE FLUORIDE				
Registration Date: 2025-06-07		Sampling Date: 2025-06-04		
Analysis starting date: 2025-06-07		Analysis Completion date: 2025-06-14		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	31
2	Near Parsabhata	PPM	80	16
3	Near Lal ghat	PPM	80	12
4	Near check post	PPM	80	14
5	Near Sharma petrol pump	PPM	80	18
6	Bhadrapara	PPM	80	12
7	Risdi	PPM	80	8
8	Rampur	PPM	80	10
9	Manikpur	PPM	80	12
10	jambahar	PPM	80	6
11	Rumgarha	PPM	80	11
12	Gerwan	PPM	80	12



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		Issue Date:	2025-08-05	
		P.O.No:	8500005780	
		P.O. Date:	2022-06-29	
FORAGE FLUORIDE				
Registration Date: 2025-07-05		Sampling Date: 2025-07-02		
Analysis starting date: 2025-07-05		Analysis Completion date: 2025-07-11		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	38
2	Near Parsabhata	PPM	80	11
3	Near Lal ghat	PPM	80	14
4	Near check post	PPM	80	13
5	Near Sharma petrol pump	PPM	80	12
6	Bhadrapara	PPM	80	9
7	Risdi	PPM	80	10
8	Rampur	PPM	80	7
9	Manikpur	PPM	80	8
10	jambahar	PPM	80	6
11	Rumgarha	PPM	80	10
12	Gerwan	PPM	80	11


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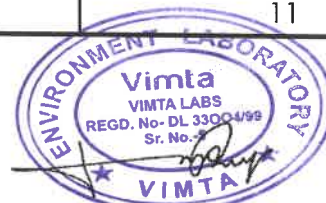
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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/11867/Forage
	Issue Date:	2025-09-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FORAGE FLUORIDE**Registration Date: 2025-08-07****Sampling Date:****2025-08-05****Analysis starting date: 2025-08-07****Analysis Completion date:****2025-08-14****Test Required :- Fluoride;****TEST RESULTS**

S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	43
2	Near Parsabhata	PPM	80	25
3	Near Lal ghat	PPM	80	36
4	Near check post	PPM	80	25
5	Near Sharma petrol pump	PPM	80	31
6	Bhadrapara	PPM	80	20
7	Risdi	PPM	80	18
8	Rampur	PPM	80	14
9	Manikpur	PPM	80	12
10	jambahar	PPM	80	10
11	Rumgarha	PPM	80	18
12	Gerwan	PPM	80	11



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	Issue Date:	2025-10-04
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FORAGE FLUORIDE

Registration Date: 2025-09-11

Sampling Date: 2025-09-09

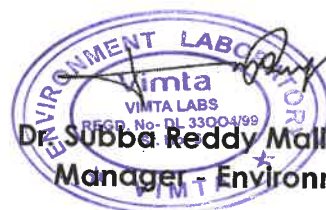
Analysis starting date: 2025-09-11

Analysis Completion date: 2025-09-17

Test Required :- Fluoride;

TEST RESULTS

S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	32
2	Near Parsabhata	PPM	80	21
3	Near Lal ghat	PPM	80	27
4	Near check post	PPM	80	23
5	Near Sharma petrol pump	PPM	80	18
6	Bhadrapara	PPM	80	22
7	Risdi	PPM	80	16
8	Rampur	PPM	80	15
9	Manikpur	PPM	80	11
10	jambahar	PPM	80	13
11	Rumgarha	PPM	80	16
12	Gerwan	PPM	80	12

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Sensitivity: Internal (C3)

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**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

Report Number : VLL/VLS/25-26/02532/001
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

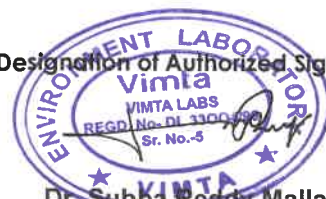
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.78	7.12	6.97	7.24
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	1.1	<1.0	<1.0	1.2
6	Total dissolved solids at 180°C	mg/l	500(2000)	168	245	361	403
7	Total Hardness as CaCO ₃	mg/l	200(600)	97	143	205	258
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	75	110	165	195.0
9	Calcium as Ca	mg/l	75(200)	24.8	38.4	69.2	65.5
10	Magnesium as Mg	mg/l	30(100)	8.5	11.5	7.7	22.8
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.024	0.019	0.014	0.16
13	Chlorides as Cl	mg/l	250(1000)	28.2	43.8	58.7	65.8
14	Sulphate as SO ₄	mg/l	200(400)	13.6	16.3	23.2	22.6
15	Fluorides as F	mg/l	1.0(1.5)	0.146	0.128	0.217	0.295
16	Nitrates as NO ₃	mg/l	45(NR)	1.9	2.1	3.2	2.6
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT) -

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.021	0.005	0.007	0.036
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.006	0.005	<0.01	0.007
28	Iron as Fe	mg/l	0.3(NR)	0.178	0.119	0.212	0.087
29	Total Chromium as Cr	mg/l	0.05(NR)	0.006	<0.005	0.007	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.013	0.014	0.009	0.034
32	Aluminum as Al	mg/l	0.03(0.2)	0.065	0.032	0.076	0.051
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.054	0.063	0.032	0.055
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
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ISSUED TO:

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KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1 (NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06 (NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2 (NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/02532/001
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1 (NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0 (NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrupada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.19	6.87	6.95	7.11
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	<1.0	1.3	1.2	1.1
6	Total dissolved solids at 180°C	mg/l	500(2000)	322	390	196	330
7	Total Hardness as CaCO ₃	mg/l	200(600)	211	231	114	196
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	180	210.0	95	140
9	Calcium as Ca	mg/l	75(200)	52.3	48.5	21.7	57.5
10	Magnesium as Mg	mg/l	30(100)	19.5	26.6	14.4	12.7
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.024	0.01	0.013	0.01
13	Chlorides as Cl	mg/l	250(1000)	36.7	46.3	33.5	67.4
14	Sulphate as SO ₄	mg/l	200(400)	12.2	24	10.5	19.6
15	Fluorides as F	mg/l	1.0(1.5)	0.231	0.264	0.228	0.186
16	Nitrates as NO ₃	mg/l	45(NR)	1.7	1.5	1.1	2.3
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.003	0.016	0.019	0.034
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.009	0.006	0.011	0.012
28	Iron as Fe	mg/l	0.3(NR)	0.045	0.064	0.034	0.027
29	Total Chromium as Cr	mg/l	0.05(NR)	0.005	0.008	0.006	0.011
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.023	0.022	0.037	0.029
32	Aluminum as Al	mg/l	0.03(0.2)	0.018	0.014	0.031	0.026
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.031	0.019	0.047	0.087
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1 (NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1 (NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-28
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.28	7.09	7.42	7.38
2	Colour	Hazen	1	2	1	3
3	Conductivity	µS/cm	135	275	190	240
4	TDS	mg/l	89	174	123	153
5	DO	mg/l	7.2	6.9	7.1	6.8
6	BOD	mg/l	1.2	2.7	1.9	2.8
7	COD	mg/l	4	10	8	12
8	Turbidity	NTU	2.7	3.5	2.4	2.3
9	Total Hardness as CaCO ₃	mg/l	45	85	57	74
10	Total Alkalinity as CaCO ₃	mg/l	40	70	60	65
11	Calcium as Ca	mg/l	9.8	19.5	12.4	14.5
12	Magnesium as Mg	mg/l	4.7	8.9	6.4	9.2
13	Chlorides as Cl	mg/l	13.8	35.6	17.9	26.8
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.03	0.06	0.02	0.05
16	Sulphates as SO ₄	mg/l	8.3	13.2	7.3	12.6
17	Fluorides as F	mg/l	0.082	0.102	0.216	0.375
18	Nitrates as NO ₃	mg/l	0.8	1.3	1.1	2.4
19	Sodium as Na	mg/l	11.3	23.5	16.4	19.8
20	Potassium as K	mg/l	0.6	1.3	1.1	1.6
21	Total Boron as B	mg/l	0.016	0.023	0.010	0.231
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	0.01	0.01	0.012
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.131	0.056	0.021	0.011
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.156	0.089	0.117	0.024
33	Aluminum as Al	mg/l	0.036	0.024	0.019	0.016
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.74	1.11	0.94	1.00
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	120	180	160	270

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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Chhattisgarh

Report Number : VLL/VLS/25-26/02532/002
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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-04-14 Sampling Date : 2025-04-09
Analysis Starting Date : 2025-04-14 Analysis Completion Date : 2025-04-28
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.34	7.48	7.56	7.52	7.28
2	Colour	Hazen	1	3	2	1	1
3	Conductivity	µS/cm	220	296	252	210	245
4	TDS	mg/l	143	190	160	135	156
5	DO	mg/l	7.4	7.2	7.3	6.8	6.7
6	BOD	mg/l	2.6	3.1	2.1	3.2	2.4
7	COD	mg/l	10	16	10	16	12
8	Turbidity	NTU	2.2	2.8	1.9	3.7	4.2
9	Total Hardness as CaCO ₃	mg/l	62	72	70	72	77
10	Total Alkalinity as CaCO ₃	mg/l	65	70	60	60	70
11	Calcium as Ca	mg/l	11.5	13.6	15.7	16.7	14.8
12	Magnesium as Mg	mg/l	8.1	9.2	8.4	7.4	9.7
13	Chlorides as Cl	mg/l	25.3	41.7	34.3	21.6	25.4
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.02	0.03	0.02	0.04	0.03
16	Sulphates as SO ₄	mg/l	8.5	16.8	14.6	12.2	13.5
17	Fluorides as F	mg/l	0.218	0.265	0.309	0.294	0.312
18	Nitrates as NO ₃	mg/l	1.3	1.8	2.4	0.9	1.4
19	Sodium as Na	mg/l	21.5	34.3	23.7	14.3	19.7
20	Potassium as K	mg/l	1.8	1.6	0.9	1.1	1.6
21	Total Boron as B	mg/l	0.013	0.008	0.026	0.017	0.012
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	0.01	<0.01	0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.027	0.043	0.098	0.036	0.022
30	Chromium as Cr ⁺⁶	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.097	0.078	0.137	0.067	0.084
33	Aluminum as Al	mg/l	0.031	0.018	0.028	0.025	0.022
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.19	1.76	1.20	0.73	0.98
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	180	240	220	230	220

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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**ISSUED TO:**

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

**Report Number : VLL/VLS/25-26/04458/001
Issued Date : 2025-06-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.89	6.85	6.95	7.20
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	1	1.2	1	1.1
6	Total dissolved solids at 180°C	mg/l	500(2000)	567	295	605	330
7	Total Hardness as CaCO ₃	mg/l	200(600)	263	167	300	208
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	250	140	285	180
9	Calcium as Ca	mg/l	75(200)	64.8	42.2	72.6	54.5
10	Magnesium as Mg	mg/l	30(100)	24.6	15	28.9	17.4
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.036	0.017	0.027	0.045
13	Chlorides as Cl	mg/l	250(1000)	98.3	52.6	91.5	39.7
14	Sulphate as SO ₄	mg/l	200(400)	43.5	13.2	41.7	15.2
15	Fluorides as F	mg/l	1.0(1.5)	0.254	0.419	0.371	0.486
16	Nitrates as NO ₃	mg/l	45(NR)	3.4	1.9	5.6	2.3
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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ISSUED TO:

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KORBA
Chhattisgarh**

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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.012	0.006	0.009	0.028
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.008	<0.005	0.006	0.005
28	Iron as Fe	mg/l	0.3(NR)	0.131	0.056	0.187	0.065
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	0.006	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.021	0.012	0.017	0.028
32	Aluminum as Al	mg/l	0.03(0.2)	0.037	0.028	0.043	0.047
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.047	0.058	0.029	0.063
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1 (NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.02	6.93	6.82	6.90
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	1	1.3	1.2	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	335	155	190	365
7	Total Hardness as CaCO ₃	mg/l	200(600)	205	85	109	210
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	175	80	90	190
9	Calcium as Ca	mg/l	75(200)	51.5	20.5	23.3	61.4
10	Magnesium as Mg	mg/l	30(100)	18.6	8.3	12.4	13.7
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.073	0.038	0.048	0.023
13	Chlorides as Cl	mg/l	250(1000)	41	17.7	29.8	48.4
14	Sulphate as SO ₄	mg/l	200(400)	19.4	11.5	12.7	17.5
15	Fluorides as F	mg/l	1.0(1.5)	0.307	0.404	0.224	0.166
16	Nitrates as NO ₃	mg/l	45(NR)	1.8	1.2	1.4	1.1
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

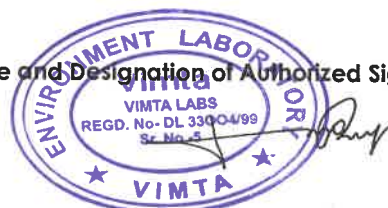
Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.005	0.019	0.023	0.037
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.006	<0.005	0.013	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.038	0.078	0.041	0.018
29	Total Chromium as Cr	mg/l	0.05(NR)	0.005	0.007	0.016	0.009
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.016	0.018	0.028	0.015
32	Aluminum as Al	mg/l	0.03(0.2)	0.022	0.018	0.025	0.031
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.024	0.017	0.038	0.065
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1 (NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/001
Issued Date : 2025-06-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/002
Issued Date : 2025-06-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS	:	SURFACE WATER SAMPLE (BALCO PLANT)
Sample Registration Date	:	2025-05-12
Analysis Starting Date	:	2025-05-12
Samples Details	:	SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra (D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.
SAMPLE COLLECTED BY VIMTA LABS LTD.		

TEST REPORT

Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.47	7.52	7.53	7.31	7.35
2	Colour	Hazen	1	2	1	2	2
3	Conductivity	µS/cm	130	228	158	267	266
4	TDS	mg/l	91	157	122	158	172
5	DO	mg/l	7.3	7.1	7.2	6.9	7.1
6	BOD	mg/l	2.3	2.1	1.9	1.4	2.4
7	COD	mg/l	9.6	8.8	6.4	7.2	10
8	Turbidity	NTU	2.2	2.8	1.9	3.7	4.2
9	Total Hardness as CaCO ₃	mg/l	37	55	46	86	86
10	Total Alkalinity as CaCO ₃	mg/l	30	50	40	70	80
11	Calcium as Ca	mg/l	9.5	12.7	11.4	20.5	18.6
12	Magnesium as Mg	mg/l	3.2	5.6	4.3	8.4	9.7
13	Chlorides as Cl	mg/l	25.3	41.7	34.3	21.6	25.4
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.01	0.05	0.03	0.08	0.09
16	Sulphates as SO ₄	mg/l	8.5	16.8	14.6	12.2	13.5
17	Fluorides as F	mg/l	0.218	0.265	0.324	0.294	0.312
18	Nitrates as NO ₃	mg/l	0.8	2.1	1.8	2.7	1.9
19	Sodium as Na	mg/l	12.5	26.2	14.8	21	19.7
20	Potassium as K	mg/l	0.7	1.5	0.3	1.6	2.3
21	Total Boron as B	mg/l	0.011	0.028	0.031	0.025	0.018
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.029	0.068	0.043	0.057	0.063
30	Chromium as Cr ⁺⁶	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.084	0.069	0.112	0.056	0.068
33	Aluminum as Al	mg/l	0.026	0.037	0.022	0.018	0.035
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.90	1.54	0.95	0.99	0.92
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	170	190	180	210	280

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Signature and Designation of Authorized Signatory

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ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/04458/001
Issued Date : 2025-06-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Baigiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.48	7.26	7.52	7.40
2	Colour	Hazen	<1.0	2	1	2
3	Conductivity	µS/cm	120	365	150	210
4	TDS	mg/l	75	233	95	130
5	DO	mg/l	7.5	6.8	7.3	7.1
6	BOD	mg/l	1.4	2.7	1.7	2.3
7	COD	mg/l	16.4	24.8	16.0	23.6
8	Turbidity	NTU	2.7	3.5	2.4	2.3
9	Total Hardness as CaCO ₃	mg/l	38	106	44	54
10	Total Alkalinity as CaCO ₃	mg/l	30	110	40	45
11	Calcium as Ca	mg/l	8.6	24.5	10	12.7
12	Magnesium as Mg	mg/l	3.9	10.8	4.7	5.4
13	Chlorides as Cl	mg/l	14.2	28.5	17.6	28.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.02	0.08	0.03	0.07
16	Sulphates as SO ₄	mg/l	6.3	15.8	7.1	9.2
17	Fluorides as F	mg/l	0.092	0.418	0.346	0.503
18	Nitrates as NO ₃	mg/l	0.3	1.1	0.7	1.6
19	Sodium as Na	mg/l	10.2	34.3	13.2	21.8
20	Potassium as K	mg/l	0.4	1.8	0.9	2.3
21	Total Boron as B	mg/l	0.012	0.034	0.011	0.163
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.072	0.097	0.018	0.023
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.076	0.098	0.095	0.065
33	Aluminum as Al	mg/l	0.017	0.035	0.012	0.034
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.72	1.45	0.86	1.29
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	90	160	140	240

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001
Issued Date : 2025-07-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.49	6.95	6.93	6.84
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	5	2	2	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	272	175	245	286
7	Total Hardness as CaCO ₃	mg/l	200(600)	167	103	145	160
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	140	90	125	150
9	Calcium as Ca	mg/l	75(200)	41.6	23.2	35.5	43.8
10	Magnesium as Mg	mg/l	30(100)	15.3	11	13.5	12.2
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.054	0.041	0.033	0.021
13	Chlorides as Cl	mg/l	250(1000)	36.4	23.3	33.2	37.1
14	Sulphate as SO ₄	mg/l	200(400)	15.3	10.2	14.7	13.1
15	Fluorides as F	mg/l	1.0(1.5)	0.243	0.189	0.185	0.147
16	Nitrates as NO ₃	mg/l	45(NR)	2.5	1.6	1.8	2.4
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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REGD. No. DL 3100456
Sr. No. 3
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ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001
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P.O. Date : 2022-06-29

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada D/W
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	<0.005	0.013	0.021	0.035
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.005	<0.005	0.009	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.049	0.084	0.036	0.023
29	Total Chromium as Cr	mg/l	0.05(NR)	0.007	0.005	0.011	0.007
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.013	0.021	0.034	0.019
32	Aluminum as Al	mg/l	0.03(0.2)	0.027	0.015	0.037	0.028
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.013	0.021	0.032	0.048
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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Vimta Labs Limited

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ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/06982/001
Issued Date : 2025-07-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
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CIN : L24110TG1990PLC011977

ISSUED TO:

M/s. Bharat Aluminum Company Limited,
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KORBA
Chhattisgarh

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Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

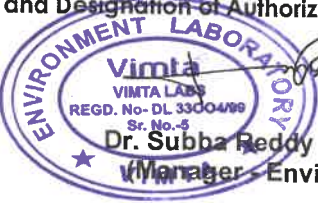
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.98	6.75	6.62	7.18
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	1	1	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	482	265	495	296
7	Total Hardness as CaCO ₃	mg/l	200(600)	225	148	220	175
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	240	130	250	160
9	Calcium as Ca	mg/l	75(200)	54.3	37.5	58.2	45.5
10	Magnesium as Mg	mg/l	30(100)	21.6	13.2	18.7	14.6
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.028	0.013	0.019	0.034
13	Chlorides as Cl	mg/l	250(1000)	69.6	38.8	65.3	33.4
14	Sulphate as SO ₄	mg/l	200(400)	25.8	17.1	27.4	13.7
15	Fluorides as F	mg/l	1.0(1.5)	0.147	0.160	0.352	0.321
16	Nitrates as NO ₃	mg/l	45(NR)	2.9	1.7	3.2	2.1
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


VIMTA LABS
REGD. No- DL 3300498
Sr. No.-5
Dr. Subba Reddy Mallampati
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
 Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
 Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.011	0.005	0.007	0.019
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.006	<0.005	<0.005	0.005
28	Iron as Fe	mg/l	0.3(NR)	0.127	0.048	0.154	0.074
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.019	0.010	0.015	0.023
32	Aluminum as Al	mg/l	0.03(0.2)	0.029	0.017	0.035	0.038
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.024	0.036	0.018	0.047
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS**GROUND WATER SAMPLES (BALCO PLANT)**

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1 (NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.23	7.25	7.23	7.24
2	Colour	Hazen	1	2	1	2
3	Conductivity	µS/cm	157	204	184	290
4	TDS	mg/l	98	124	117	182
5	DO	mg/l	6.3	6.1	6.4	5.9
6	BOD	mg/l	1.2	2.7	1.9	2.8
7	COD	mg/l	5	12	6	10
8	Turbidity	NTU	15.0	8.0	20.0	9.0
9	Total Hardness as CaCO ₃	mg/l	44	87	63	74
10	Total Alkalinity as CaCO ₃	mg/l	40	75	50	60
11	Calcium as Ca	mg/l	10.0	21	13.5	15
12	Magnesium as Mg	mg/l	4.7	8.4	7.2	8.9
13	Chlorides as Cl	mg/l	20.5	35.1	22.3	43.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.03	0.06	0.02	0.04
16	Sulphates as SO ₄	mg/l	7.4	14.3	8.4	18.2
17	Fluorides as F	mg/l	0.218	0.353	0.252	0.306
18	Nitrates as NO ₃	mg/l	0.7	1.4	1.3	1.6
19	Sodium as Na	mg/l	14.8	29.2	12.7	31.5
20	Potassium as K	mg/l	1.1	1.6	0.9	1.7
21	Total Boron as B	mg/l	0.007	0.019	0.010	0.141
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.023	0.098	0.037	0.016
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.065	0.143	0.097	0.129
33	Aluminum as Al	mg/l	0.010	0.017	0.010	0.035
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.97	1.36	0.69	1.59
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	70	140	90	160

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subha Reddy Mallampati
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Report Number : VLL/VLS/25-26/06982/002
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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

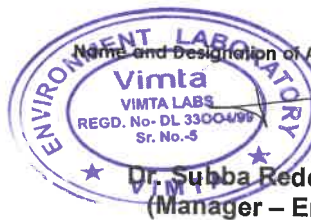
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.33	7.88	7.56	7.40	7.70
2	Colour	Hazen	1	2	1	3	3
3	Conductivity	µS/cm	175	316	254	295	214
4	TDS	mg/l	82	142	95	170	168
5	DO	mg/l	7.2	7.1	7.3	7.4	7.2
6	BOD	mg/l	2.6	3.1	2.4	2.8	2.4
7	COD	mg/l	6.6	7.2	7.4	7.9	7.7
8	Turbidity	NTU	3	2	2	2	3
9	Total Hardness as CaCO ₃	mg/l	37	55	46	86	80
10	Total Alkalinity as CaCO ₃	mg/l	30	40	35	65	75
11	Calcium as Ca	mg/l	9.5	12.7	11.4	20.5	18.6
12	Magnesium as Mg	mg/l	3.2	5.6	4.3	8.4	9.7
13	Chlorides as Cl	mg/l	19.7	38.6	22.5	32.1	26.4
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.02	0.06	0.04	0.07	0.08
16	Sulphates as SO ₄	mg/l	5.2	14.2	9.5	16.3	14.4
17	Fluorides as F	mg/l	0.415	0.421	0.408	0.432	0.426
18	Nitrates as NO ₃	mg/l	0.75	2.2	1.2	3.2	1.9
19	Sodium as Na	mg/l	12.5	26.2	14.8	21	19.7
20	Potassium as K	mg/l	0.7	1.5	0.3	1.6	2.3
21	Total Boron as B	mg/l	0.01	0.015	0.021	0.026	0.017
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.015	0.064	0.042	0.025	0.061
30	Chromium as Cr ⁺⁶	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.087	0.043	0.087	0.052	0.094
33	Aluminum as Al	mg/l	0.014	0.019	0.016	0.022	0.021
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.90	1.54	0.95	0.99	0.92
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	90	110	110	130	120

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

- END OF THE REPORTS -

Signature and Designation of Authorized Signatory

REGD. No- DL 3300499
Sr. No.-5
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ISSUED TO:

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KORBA
Chhattisgarh**

**Report Number : VLL/VLS/25-26/09740/001
Issued Date : 2025-08-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

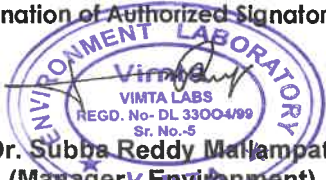
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.82	6.95	6.93	7.04
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	2	2	1	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	458	242	455	277
7	Total Hardness as CaCO ₃	mg/l	200(600)	216	133	214	159
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	227	118	233	147
9	Calcium as Ca	mg/l	75(200)	41.6	28.4	51.7	41.3
10	Magnesium as Mg	mg/l	30(100)	18.7	11.9	15.3	12.4
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.021	0.011	0.016	0.027
13	Chlorides as Cl	mg/l	250(1000)	54.8	34.1	59.3	27.4
14	Sulphate as SO ₄	mg/l	200(400)	24.1	15.3	22.2	11.6
15	Fluorides as F	mg/l	1.0(1.5)	0.128	0.114	0.286	0.247
16	Nitrates as NO ₃	mg/l	45(NR)	2.4	1.6	2.7	1.8
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager Environment)

ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/001
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.008	0.002	0.005	0.012
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.004	<0.005	<0.005	0.003
28	Iron as Fe	mg/l	0.3(NR)	0.114	0.032	0.106	0.069
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.014	0.018	0.019	0.021
32	Aluminum as Al	mg/l	0.03(0.2)	0.018	0.015	0.018	0.022
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.018	0.031	0.015	0.037
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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(Manager - Environment)

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

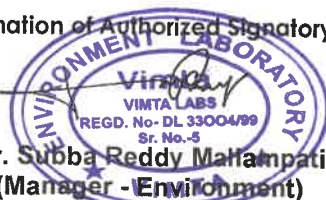
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.31	6.94	6.97	6.96
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	3	2	1	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	259	162	221	248
7	Total Hardness as CaCO ₃	mg/l	200(600)	152	89	133	143
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	127	72.4	117	137
9	Calcium as Ca	mg/l	75(200)	35.7	19.3	31.2	35.4
10	Magnesium as Mg	mg/l	30(100)	13.6	9.3	10.2	11.8
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.043	0.034	0.031	0.019
13	Chlorides as Cl	mg/l	250(1000)	31.5	20.4	30.4	36.8
14	Sulphate as SO ₄	mg/l	200(400)	13.7	8.9	12.4	11.8
15	Fluorides as F	mg/l	1.0(1.5)	0.393	0.168	0.172	0.124
16	Nitrates as NO ₃	mg/l	45(NR)	2.2	1.4	1.9	2.1
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS. (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.002	0.009	0.016	0.028
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	0.002	0.004	0.007	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.037	0.061	0.029	0.018
29	Total Chromium as Cr	mg/l	0.05(NR)	0.003	0.004	0.009	0.006
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.011	0.018	0.029	0.02
32	Aluminum as Al	mg/l	0.03(0.2)	0.021	0.019	0.021	0.022
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.015	0.016	0.027	0.042
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

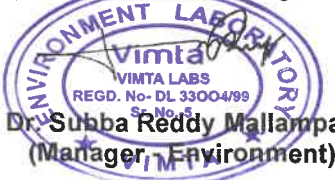
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Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager, Environment)

ISSUED TO:

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subha Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office

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Driven by Quality. Inspired by Science.

ISSUED TO:

M/s. Bharat Aluminum Company Limited,

BALCO

KORBA

Chhattisgarh

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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
 Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-22
 Samples Details : SW1-Bailgiri Nala (U/S)-Near Bailgiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3-Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.14	7.18	7.22	7.18
2	Colour	Hazen	1	2	2	3
3	Conductivity	$\mu\text{S}/\text{cm}$	144	284	181	271
4	TDS	mg/l	89	176	93	166
5	DO	mg/l	7.1	6.5	6.9	7.1
6	BOD	mg/l	1.1	1.8	1.3	1.4
7	COD	mg/l	6	10	8	9
8	Turbidity	NTU	18.0	10.0	24.0	12.0
9	Total Hardness as CaCO_3	mg/l	37	78	53	64
10	Total Alkalinity as CaCO_3	mg/l	36	65	44	51
11	Calcium as Ca	mg/l	8.1	17	10.1	11
12	Magnesium as Mg	mg/l	4.2	7.8	6.4	7.2
13	Chlorides as Cl	mg/l	17.4	31.4	18.4	38.6
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.02	0.04	0.03	0.02
16	Sulphates as SO_4	mg/l	6.9	10.2	8.1	15.2
17	Fluorides as F	mg/l	0.254	0.384	0.318	0.342
18	Nitrates as NO_3	mg/l	0.9	1.1	1.0	1.3
19	Sodium as Na	mg/l	12.3	25.3	10	26.7
20	Potassium as K	mg/l	1.2	1.4	0.8	1.5
21	Total Boron as B	mg/l	0.006	0.014	0.009	0.120
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.021	0.084	0.028	0.011
30	Chromium as Cr^{6+}	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.057	0.127	0.087	0.114
33	Aluminum as Al	mg/l	0.009	0.015	0.008	0.027
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.91	1.21	0.57	1.44
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	90	110	175	336

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory


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CIN : L24110TG1990PLC011977

ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/09740/002
Issued Date : 2025-08-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29

SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

Page 1 of 1

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-22
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.18	7.64	7.47	7.18	7.54
2	Colour	Hazen	2	2	2	2	1
3	Conductivity	µS/cm	266	294	237	284	198
4	TDS	mg/l	127	132	82	158	147
5	DO	mg/l	6.8	6.7	7.2	6.8	6.6
6	BOD	mg/l	1.4	1.8	1.4	1.8	1.6
7	COD	mg/l	4.3	4.8	3.6	3.8	3.4
8	Turbidity	NTU	11	10	10	11	11
9	Total Hardness as CaCO ₃	mg/l	31	47	38	74	69
10	Total Alkalinity as CaCO ₃	mg/l	24	32	29	5.8	67
11	Calcium as Ca	mg/l	8.4	9.4	8.9	16.7	14.3
12	Magnesium as Mg	mg/l	3.1	4.7	3.7	7.4	8.4
13	Chlorides as Cl	mg/l	15.6	32.4	16.9	28.1	19.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.03	0.04	0.05	0.06	0.05
16	Sulphates as SO ₄	mg/l	4.5	9.8	8.6	14.3	10.2
17	Fluorides as F	mg/l	0.378	0.409	0.329	0.427	0.414
18	Nitrates as NO ₃	mg/l	0.62	1.7	1.1	2.7	1.8
19	Sodium as Na	mg/l	10.1	21.3	11.7	19.1	16.4
20	Potassium as K	mg/l	0.8	1.3	0.4	1.4	2.1
21	Total Boron as B	mg/l	0.02	0.019	0.024	0.018	0.014
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.029	0.051	0.038	0.019	0.052
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.063	0.052	0.074	0.043	0.079
33	Aluminum as Al	mg/l	0.011	0.021	0.014	0.017	0.022
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.81	1.33	0.88	0.94	0.89
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	495	525	480	510	490

Method of Testing: As per APHA 23rd edition and IS: 3025.
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.96	6.91	6.84	6.98
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	2	1	2	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	181	270	357	287
7	Total Hardness as CaCO ₃	mg/l	200(600)	106	174	205	183
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	50	65	110	104
9	Calcium as Ca	mg/l	75(200)	25.6	44.8	52.4	50.8
10	Magnesium as Mg	mg/l	30(100)	10.2	15.1	18.0	13.5
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.2	<0.2	<0.2	<0.2
12	Boron as B	mg/l	0.5(1.0)	0.017	0.023	0.016	0.021
13	Chlorides as Cl	mg/l	250(1000)	45.3	81.1	93.5	62.8
14	Sulphate as SO ₄	mg/l	200(400)	29.4	38.5	39.1	29.9
15	Fluorides as F	mg/l	1.0(1.5)	0.174	0.166	0.387	0.318
16	Nitrates as NO ₃	mg/l	45(NR)	1.8	2.3	3.7	1.9
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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ISSUED TO:

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

Report Number : VLL/VLS/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
 Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
 Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.008	<0.01	0.012	0.011
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	<0.005	<0.005	<0.005	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.095	0.037	0.076	0.054
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.008	0.024	0.011	0.006
32	Aluminum as Al	mg/l	0.03(0.2)	0.017	0.012	0.028	0.024
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.021	0.028	0.009	0.034
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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CIN : L24110TG1990PLC011977

ISSUED TO:

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

Report Number : VLL/VLS/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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Chhattisgarh

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Page 4 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1 (NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0 (NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.36	6.86	6.85	6.84
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	2	2	2	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	268	160	240	254
7	Total Hardness as CaCO ₃	mg/l	200(600)	162	102	158	164
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	95	45	70	60
9	Calcium as Ca	mg/l	75(200)	37.6	25.0	43.2	41.5
10	Magnesium as Mg	mg/l	30(100)	16.5	9.5	12.2	14.6
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.2	<0.2	<0.2	<0.2
12	Boron as B	mg/l	0.5(1.0)	0.036	0.028	0.022	0.018
13	Chlorides as Cl	mg/l	250(1000)	59.7	43.0	65.8	89.5
14	Sulphate as SO ₄	mg/l	200(400)	27.5	21.2	29.1	21.1
15	Fluorides as F	mg/l	1.0(1.5)	0.362	0.219	0.201	0.106
16	Nitrates as NO ₃	mg/l	45(NR)	5.6	1.2	2.3	3.5
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	<0.01	0.012	0.016	0.035
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	<0.005	<0.005	<0.005	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.032	0.035	0.024	0.019
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.017	0.013	0.023	0.011
32	Aluminum as Al	mg/l	0.03(0.2)	0.016	0.011	0.026	0.015
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.007	0.015	0.028	0.031
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Vimta
VIMTA LABS
REGD. No. DL 3304/2023
Dr. Subba Reddy Mallampati
(Manager - Environment)
VIMTA

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CIN : L24110TG1990PLC011977

ISSUED TO:

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

**Report Number : VLL/VLS/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1 (NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1 (NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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Driven by Quality. Inspired by Science.

ISSUED TO:

M/s. Bharat Aluminum Company Limited,

BALCO

KORBA

Chhattisgarh

Report Number : VLL/VLS/25-26/11867/001

Issued Date : 2025-09-04

P.O. No. : 8500005780

P.O. Date : 2022-06-29

Page 4 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-30
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1 (NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0 (NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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Report Number : VLL/VLS/25-26/11867/001
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P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-08-13 Sampling Date : 2025-08-07
Analysis Starting Date : 2025-08-13 Analysis Completion Date : 2025-08-26
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti,
SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.21	7.26	7.22	7.28
2	Colour	Hazen	2	3	2	3
3	Conductivity	$\mu\text{S}/\text{cm}$	125	268	140	196
4	TDS	mg/l	80	170	88	120
5	DO	mg/l	6.2	5.8	6.3	5.9
6	BOD	mg/l	1.0	2.2	1.4	2.1
7	COD	mg/l	3.2	7.8	5.6	6.4
8	Turbidity	NTU	7.0	11.0	8.0	12.0
9	Total Hardness as CaCO_3	mg/l	36	70	48	68
10	Total Alkalinity as CaCO_3	mg/l	35.0	68.0	40	45.0
11	Calcium as Ca	mg/l	8.5	17.8	10	12.5
12	Magnesium as Mg	mg/l	3.6	6.2	5.6	8.9
13	Chlorides as Cl	mg/l	14.4	32.2	16.2	26.9
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.04	0.05	0.03	0.06
16	Sulphates as SO_4	mg/l	6.2	12.4	5.3	10.5
17	Fluorides as F	mg/l	0.163	0.258	0.229	0.217
18	Nitrates as NO_3	mg/l	0.3	0.8	0.7	1.3
19	Sodium as Na	mg/l	12.2	28.7	9.6	13.5
20	Potassium as K	mg/l	0.7	1.2	0.5	0.5
21	Total Boron as B	mg/l	0.012	0.021	0.013	0.087
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.019	0.078	0.045	0.012
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.047	0.121	0.079	0.098
33	Aluminum as Al	mg/l	0.023	0.011	0.010	0.023
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.88	1.49	0.60	0.71
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	180	340	220	380

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/11867/002
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS

: SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date

: 2025-08-13

Sampling Date

: 2025-08-07

Analysis Starting Date

: 2025-08-13

Analysis Completion Date

: 2025-08-26

Samples Details

: SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.49	7.64	7.26	7.42	7.68
2	Colour	Hazen	2	3	2	3	3
3	Conductivity	$\mu\text{S}/\text{cm}$	129	178	135	184	168
4	TDS	mg/l	83	112	85	122	110
5	DO	mg/l	7.2	7.4	7.6	7.7	7.5
6	BOD	mg/l	2.7	2.1	2.5	2.9	3.2
7	COD	mg/l	9.6	11.2	10.4	11.2	12
8	Turbidity	NTU	11.0	9.0	11.0	10.0	9.0
9	Total Hardness as CaCO_3	mg/l	44	55	50	66	57
10	Total Alkalinity as CaCO_3	mg/l	35	40	30	55	50
11	Calcium as Ca	mg/l	11.5	13.3	12.5	16.7	15.8
12	Magnesium as Mg	mg/l	3.7	5.4	4.6	5.8	4.4
13	Chlorides as Cl	mg/l	16.8	24.8	19.4	21.2	18.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO_4	mg/l	0.04	0.08	0.03	0.06	0.05
16	Sulphates as SO_4	mg/l	4.3	9.6	8.2	6.3	5.1
17	Fluorides as F	mg/l	0.436	0.452	0.418	0.563	0.528
18	Nitrates as NO_3	mg/l	1.1	1.6	0.9	1.8	0.8
19	Sodium as Na	mg/l	9.4	14.6	8.3	12.8	11.3
20	Potassium as K	mg/l	0.7	1.5	0.3	1.6	2.3
21	Total Boron as B	mg/l	<0.01	0.011	0.034	0.019	0.013
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.011	0.058	0.036	0.019	0.034
30	Chromium as Cr^{+6}	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.154	0.082	0.076	0.087	0.114
33	Aluminum as Al	mg/l	0.011	0.023	0.019	0.018	0.024
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.62	0.85	0.51	0.69	0.65
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	260	340	320	490	480

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

- END OF THE REPORTS -

Name and Designation of Authorized Signatory

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ISSUED TO:**M/s. Bharat Aluminum Company Limited,****BALCO****KORBA****Chhattisgarh****Report Number****Issued Date****P.O. No.****P.O. Date****VLL/VLS/25-26/14073/001****2025-10-04****8500005780****2022-06-29****SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Page 1 of 4

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
 Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
 Test Required : Water Analysis as per IS 10500 : 2012
 SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
1	pH value	-	6.5-8.5 (NR)	6.89	6.82	6.82	7.02
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	2	2	2	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	195	220	331	290
7	Total Hardness as CaCO ₃	mg/l	200(600)	128	145	221	193
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	55	60	90	95
9	Calcium as Ca	mg/l	75(200)	31.2	42.0	65.2	55.0
10	Magnesium as Mg	mg/l	30(100)	12.1	9.7	14.2	13.5
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.021	0.019	0.015	0.037
13	Chlorides as Cl	mg/l	250(1000)	48.2	55.0	89.4	74.0
14	Sulphate as SO ₄	mg/l	200(400)	31.4	37.2	46.8	29.3
15	Fluorides as F	mg/l	1.0(1.5)	0.186	0.149	0.394	0.263
16	Nitrates as NO ₃	mg/l	45(NR)	2.1	1.7	2.9	1.7
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

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**ISSUED TO:**

M/s. Bharat Aluminum Company Limited,
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KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001
Issued Date : 2025-10-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	0.01	0.013	0.009	0.021
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	<0.005	<0.005	<0.005	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.056	0.033	0.064	0.038
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.012	0.018	0.026	0.009
32	Aluminum as Al	mg/l	0.03(0.2)	0.013	0.021	0.017	0.028
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.017	0.021	0.015	0.026
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

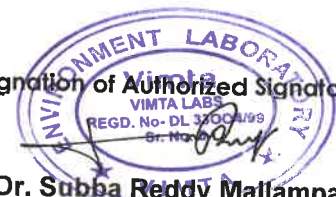
Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager - Environment)



ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/14073/001
Issued Date : 2025-10-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

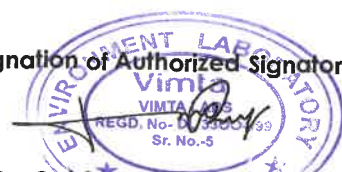
Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

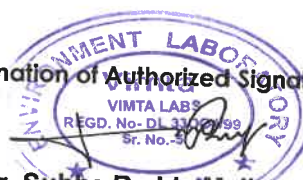
TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

-END OF THE REPORTS-

Name and Designation of Authorized Signatory


VIMTA LABS
REGD. No- DL 31/07/99
Sr. No. 3
Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

**M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh**

Report Number : VLL/VLS/25-26/14073/001
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.38	6.94	6.89	6.96
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	1(5)	3	2	1	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	310	198	268	243
7	Total Hardness as CaCO ₃	mg/l	200(600)	186	130	190	180
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	110	60	85	60
9	Calcium as Ca	mg/l	75(200)	50.4	33.6	53.7	46.8
10	Magnesium as Mg	mg/l	30(100)	14.6	11.0	13.2	15.1
11	Free Residual chlorine	mg/l	0.2(1.0)	<0.1	<0.1	<0.1	<0.1
12	Boron as B	mg/l	0.5(1.0)	0.043	0.016	0.056	0.031
13	Chlorides as Cl	mg/l	250(1000)	70.0	51.0	69.7	84.5
14	Sulphate as SO ₄	mg/l	200(400)	33.6	25.9	29.7	22.5
15	Fluorides as F	mg/l	1.0(1.5)	0.482	0.238	0.187	0.112
16	Nitrates as NO ₃	mg/l	45(NR)	3.6	1.4	2.8	1.7
17	Phenolic Compounds as C ₆ H ₅ OH	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001
18	Cyanides as CN	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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(Manager - Environment)

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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	Total Arsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01
23	Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	0.01	<0.01
24	Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01
25	Manganese as Mn	mg/l	0.1(0.3)	<0.01	0.016	0.021	0.011
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.01	<0.01	<0.01	<0.01
27	Nickel as Ni	mg/l	0.02(NR)	<0.005	<0.005	<0.005	<0.005
28	Iron as Fe	mg/l	0.3(NR)	0.026	0.041	0.037	0.023
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005
30	Selenium as Se	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
31	Zinc as Zn	mg/l	5.0(15)	0.022	0.015	0.028	0.013
32	Aluminum as Al	mg/l	0.03(0.2)	0.013	0.021	0.019	0.011
33	Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001
34	Sulphide as H ₂ S	mg/l	0.05(NR)	<0.05	<0.05	<0.05	<0.05
35	Chloramines as Cl ₂	mg/l	4.0(NR)	<0.05	<0.05	<0.05	<0.05
36	Ammonia (as total ammonia-N)	mg/l	0.5(NR)	<0.05	<0.05	<0.05	<0.05
37	Barium as Ba	mg/l	0.7(NR)	0.009	0.021	0.018	0.025
38	Silver as Ag	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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ISSUED TO:

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
39	Polychlorinated biphenyls	mg/l	0.0005(NR)	Absent	Absent	Absent	Absent
40	Polynuclear aromatic hydrocarbon as PAH	mg/l	0.0001(NR)	<0.0001	<0.0001	<0.0001	<0.0001
41	Bromoform	mg/l	0.1(NR)	<0.0001	<0.0001	<0.0001	<0.0001
42	Dibromochloromethane	mg/l	0.1(NR)	<0.01	<0.01	<0.01	<0.01
43	Bromodichloromethane	mg/l	0.06(NR)	<0.01	<0.01	<0.01	<0.01
44	Chloroform	mg/l	0.2(NR)	<0.001	<0.001	<0.001	<0.001
(A)	Pesticides						
45	Alachlor	µg/l	20	<0.01	<0.01	<0.01	<0.01
46	Atrazine	µg/l	2	<0.01	<0.01	<0.01	<0.01
47	Aldrin	µg/l	0.03	<0.01	<0.01	<0.01	<0.01
48	Alpha HCH	µg/l	0.01	<0.01	<0.01	<0.01	<0.01
49	Beta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
50	Butachlor	µg/l	125	<0.01	<0.01	<0.01	<0.01
51	Chlorpyrifos	µg/l	30	<0.01	<0.01	<0.01	<0.01
52	Delta HCH	µg/l	0.04	<0.01	<0.01	<0.01	<0.01
53	2,4-Dichlorophenoxyacetic acid	µg/l	30	<0.01	<0.01	<0.01	<0.01
54	DDT	µg/l	1	<0.01	<0.01	<0.01	<0.01
55	Endosulfan (alpha, beta and Sulphate)	µg/l	0.4	<0.01	<0.01	<0.01	<0.01
56	Ethion	µg/l	3	<0.01	<0.01	<0.01	<0.01
57	Gamma HCH	µg/l	2	<0.01	<0.01	<0.01	<0.01
58	Isoproturon	µg/l	9	<0.01	<0.01	<0.01	<0.01

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012

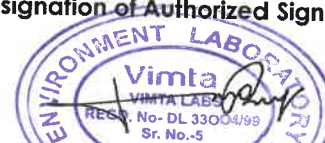
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies(B/W)	Bhadrapada D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	Absent	Absent	Absent
64	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	Absent
(B)	Radioactive						
65	Alpha emitters	Bq/l	0.1(NR)	BDL	BDL	BDL	BDL
66	Beta emitters	Bq/l	1.0(NR)	BDL	BDL	BDL	BDL

Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)
Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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2025-10-04

8500005780

2022-06-29

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SAMPLE PARTICULARS**: SURFACE WATER SAMPLE (BALCO PLANT)**

Sample Registration Date

: 2025-09-15

Sampling Date

: 2025-09-09

Analysis Starting Date

: 2025-09-15

Analysis Completion Date

: 2025-09-30

Samples Details

: SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti, SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.34	7.21	7.25	7.31
2	Colour	Hazen	1	2	1	4
3	Conductivity	µS/cm	150	273	180	230
4	TDS	mg/l	99	173	113	144
5	DO	mg/l	6.4	6.3	6.8	6.4
6	BOD	mg/l	0.7	2.4	1.2	2.6
7	COD	mg/l	2.4	8.8	4.8	11.2
8	Turbidity	NTU	8	7.0	16.0	13
9	Total Hardness as CaCO ₃	mg/l	45	82	64	82
10	Total Alkalinity as CaCO ₃	mg/l	40	65.0	50	55
11	Calcium as Ca	mg/l	11.5	22.4	13	18.2
12	Magnesium as Mg	mg/l	3.87	6.32	7.76	8.78
13	Chlorides as Cl	mg/l	18.3	36.5	21.8	32.3
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.03	0.04	0.04	0.05
16	Sulphates as SO ₄	mg/l	9.8	13.7	7.4	10.8
17	Fluorides as F	mg/l	0.105	0.168	0.174	0.209
18	Nitrates as NO ₃	mg/l	0.6	1.3	0.9	1.8
19	Sodium as Na	mg/l	14.6	24.4	11.3	15.5
20	Potassium as K	mg/l	0.5	1.1	0.5	0.7
21	Total Boron as B	mg/l	0.010	0.018	0.011	0.065
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.008	0.081	0.064	0.024
30	Chromium as Cr ⁺⁶	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.037	0.098	0.098	0.087
33	Aluminum as Al	mg/l	0.031	0.024	0.017	0.028
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.95	1.17	0.61	0.75
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	140	170	150	210

Method of Testing: As per APHA 23rd edition and IS: 3025

Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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Report Number : VLL/VLS/25-26/14073/002
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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9- Hasdeo River near Kobra (D/S)-2.

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

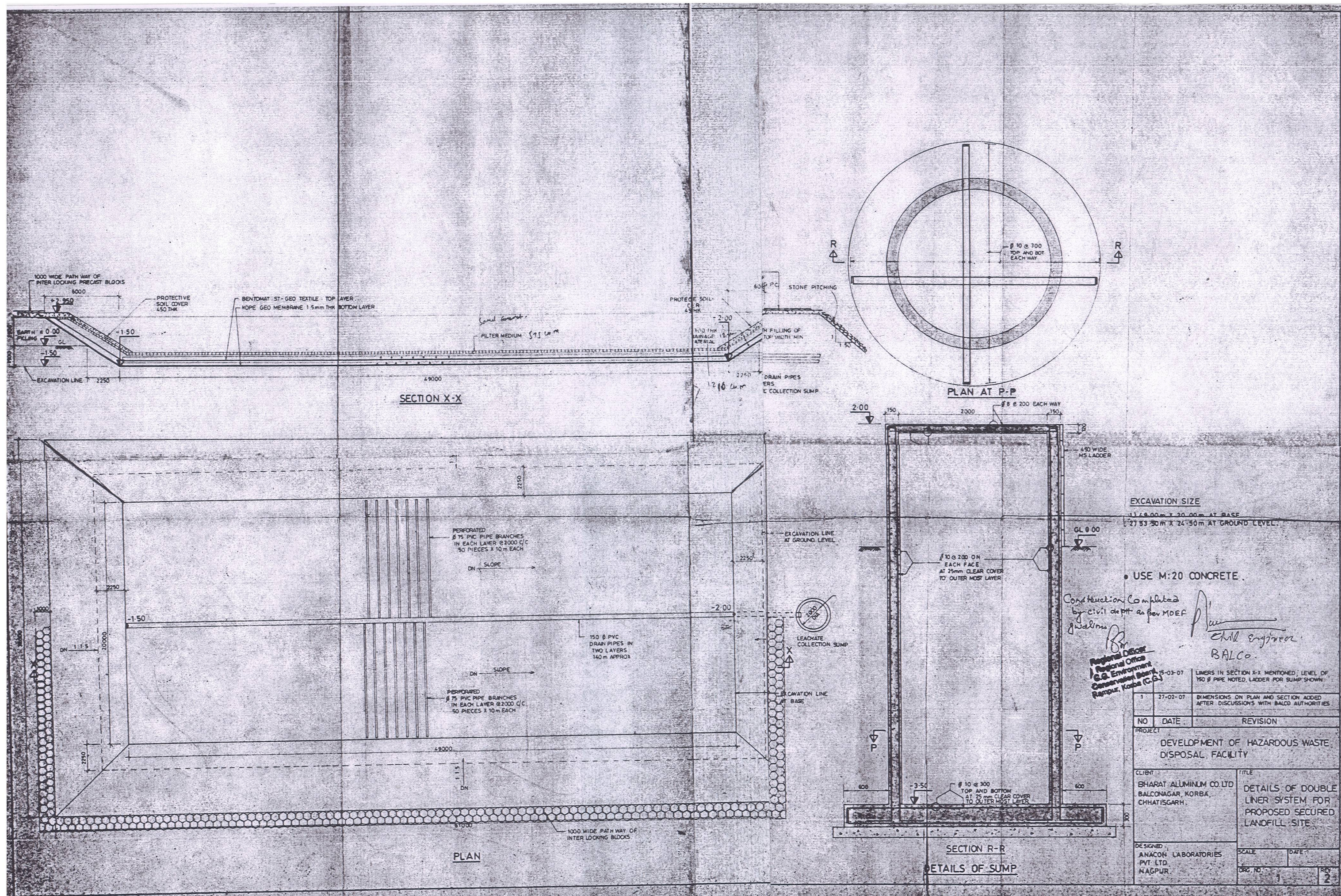
Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.46	7.53	7.28	7.38	7.51
2	Colour	Hazen	2	2	3	4	3
3	Conductivity	µS/cm	115	160	141	155	173
4	TDS	mg/l	73	100	90	101	110
5	DO	mg/l	7.6	7.3	7.8	7.5	7.6
6	BOD	mg/l	2.5	1.8	1.7	2.7	2.6
7	COD	mg/l	8.8	9.6	7.2	10.4	9.6
8	Turbidity	NTU	12.0	8.0	11.0	10.0	9.0
9	Total Hardness as CaCO ₃	mg/l	38	50	49	55	57
10	Total Alkalinity as CaCO ₃	mg/l	30	38	35	50	55
11	Calcium as Ca	mg/l	10.2	12.5	13.5	14.3	16.2
12	Magnesium as Mg	mg/l	3.1	4.3	3.8	4.6	3.9
13	Chlorides as Cl	mg/l	15.2	22.3	18.4	15.4	17.3
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.03	0.06	0.02	0.05	0.03
16	Sulphates as SO ₄	mg/l	3.7	6.8	7.3	4.2	4.9
17	Fluorides as F	mg/l	0.429	0.418	0.473	0.494	0.417
18	Nitrates as NO ₃	mg/l	0.9	1.1	1.2	0.6	0.7
19	Sodium as Na	mg/l	8.5	13.4	9.7	10.2	12.7
20	Potassium as K	mg/l	0.6	1.1	0.5	1.3	1.9
21	Total Boron as B	mg/l	<0.01	0.025	0.041	0.023	0.018
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.016	0.046	0.031	0.022	0.029
30	Chromium as Cr ⁺⁶	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.121	0.063	0.054	0.075	0.098
33	Aluminum as Al	mg/l	0.013	0.037	0.015	0.021	0.031
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.60	0.83	0.60	0.60	0.74
36	Insecticides	mg/l	Absent	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	230	330	410	450	490

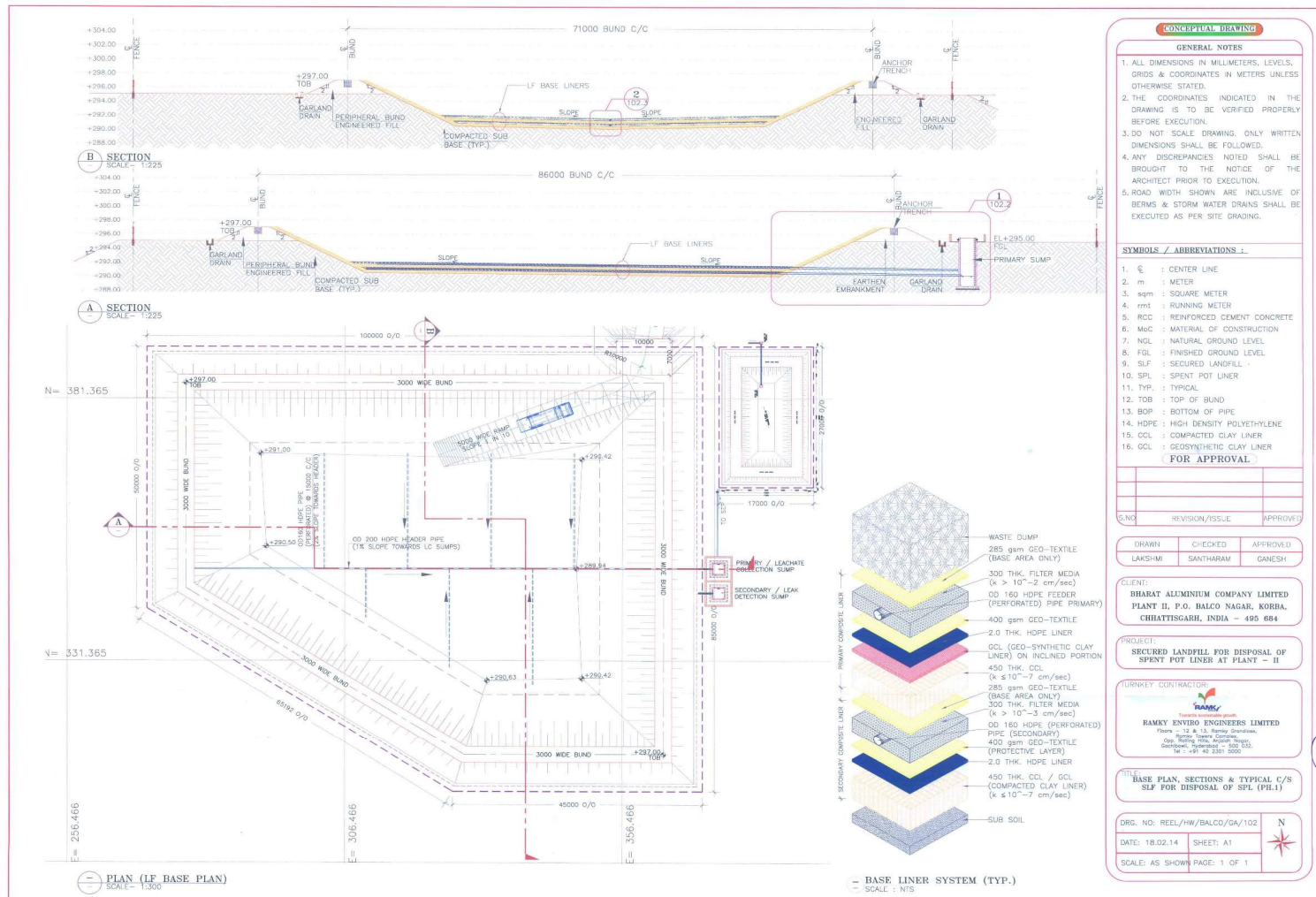
Method of Testing: As per APHA 23rd edition and IS: 3025
Instrument Used: ICP-OES (Perkin-Elmer) & ICP-MS (agilent)

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager – Environment)





Annexure VIII

REPORT ON "MONITORING AND EVALUATION OF PLANTATION"

AT

M/S. BHARAT ALUMINIUM COMPANY LIMITED

Balco Nagar, Korba, Chhattisgarh - 495684

May 2024



"NAV AASTHA JAN VIKAS SEVA SAMITI"

**8/5, "JASMATI BHAWAN", NEAR OLD KATTHA FACTORY,
GODHANPUR, AMBIKAPUR - 497001**

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WHO WE ARE?

NAV AASTHA JAN VIKAS SEVA SAMITI is a registered NGO under societies registration act. 1973 of Indian constitution, registered on 07th April 2005 at Raipur (C.G.). The working area of the organization is whole Chhattisgarh. Our main focus is towards the youth development as well as women and child empowerment of the state.



We have been working continuously in betterment of the people of Chhattisgarh (*chhattisgarhiya*) in educational, physical and many more sectors by the help of schemes of govt. The organization works under many schemes of the respectable govt. like – **Green India Mission (GIM)**, **Bio-diversity Program**, **Integrated Watershed Management Program (IWMP)**, **SGSY**, **SHG** forming, **JFMC** and many more. We are also engaged in **Monitoring and Evaluation** of plantations of government entities as well as private entities. We are also enlisted for the monitoring and evaluation of various entities working in Chhattisgarh by PCCF, Raipur under the ministry of Environment and Forest GoCG.

“New challenges new innovations.....”

CENTRAL POLLUTION CONTROL BOARD

The **Central Pollution Control Board (CPCB)**, statutory organization, was constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. It also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986.



CPCB along with its counterparts **State Pollution Control Boards (SPCBs)** are responsible for implementation of legislations relating to prevention and control of environmental pollution.

The Central Pollution Control Board (CPCB) and the Ministry of Environment and Forests (MoEF) have guidelines for green belt development. The guidelines state that **33% of the total land area should be kept as greenbelt**. The greenbelt should be developed along the boundary by planting tall, evergreen trees.

The guidelines also state that:

- The species selected should be capable of **growing fast, wind firm, and long lived**.
- The **width** of the 3 tier green belt should vary from **15m to 100m** depending on the type of project.
- The **density** of the green belt should be in the range **1500 to 2500 plants per ha**.
- The green belt species should be **native species**.
- Certain species of plants can **absorb pollutants** while others can **thrive** in polluted atmosphere.

INTRODUCTION TO GREENBELT DEVELOPMENT

For India's industrial and other developmental operations, environmental protection has been prioritized. The **Ministry of Environment & Forests (MoEF)** has advocated for the inclusion of environmental considerations in the development of projects through a number of policy & measures. According to the terms of the **Environment (Protection) Act of 1986**, one such initiative is the notification on **Environmental Impact Assessment (EIA)** of developmental projects, which was first issued in 1994 and then updated in 2006. Greenbelts are proactively discussed in the EIA Guidance Manual for building, construction, township, and area development projects.



The term "greenbelt" refers to a boundary established beyond of which industrial development is prohibited. Greenbelts are now present not only for the purpose of protecting sensitive areas to maintain ecological balance but are also found in urban areas so as to act as a sink for the harmful gases released by vehicles and industries operating in the city area. This idea has evolved through a long line of cases. The Central Pollution Control Board has created extensive Guidelines for Developing Greenbelts in this regard [Refer Probes/75/1999-2000].

The establishment of green belts is advantageous in many ways, contributing to biodiversity preservation, soil moisture retention, ground water recharging, and sustaining the region's pleasant microclimate. Additionally, the plants in a green belt can absorb environmental toxins and aid in efficient pollution control.

Green belts are designed open spaces that are protected against construction of new structures, factories, dams, etc. Safeguarded in the sense that only vegetation growth will be permitted on such designated locations, and no infrastructure development will be permitted there. The ecological health of any particular region depends on the presence of green belts in and around urban and industrial regions.

According to MoEF prerequisites, tall, evergreen trees must be planted all along the boundary to create a greenbelt. The overall green area, including the landscaping area, will make up 1/3rd (or around 33%) of the plant area. This will contain a lay-down space that will thereafter become a green area. Two rows of tall, evergreen plants must be planted at a rate of 600–1000 per Acre (1500–2500 per Hectare),

depending on the size, activity, and environmental effects of the industry; the amount of land available; and the agro-climatic conditions. Plants should be spaced apart from one another by around 10 meters for the road side. Trees having a lot of branches and a canopy, such as peepal, banyan, kadamb, neem, and Conocarpus lancefolius, should be grown as these kinds of avenue trees. Plantations must use gathered rainwater and treated effluent water.

A list of plants suitable for greenbelt and to the local agro climatic conditions is given in Table below:

S.No	Botanical Name	Family	Common Name	Habitat	Height (m)
1.	<i>Acacia auriculiformis</i> <i>A.cunn</i>	Mimoseae	Australian Wattle	Tree	16
2.	<i>Acacia nilotica</i> (Linn) <i>Wild</i>	Mimoseae	Indian gum	Tree	8
3.	<i>Albizia lebbeck</i> Benth	Mimoseae	Sirisha	Tree	15
4.	<i>Anthocephalus chinensis</i> (Lamk.)	Rubiaceae	Kadambama	Tree	20
5.	<i>Azadirachta indica</i>	Meliaceae	Neem	Tree	20
6.	<i>Bambusa arundinacia</i> (Retz) Roxb	Poaceae	Thorny Bamboo	Shrub	20
7.	<i>Bambusa vulgaris</i> Schrad	Poaceae	The Golden Bamboo	Shrub/ Tree	15
8.	<i>Bauhinia purpurea</i> Linn	Caesalpinaceae	Butterfly tree	Tree	7
9.	<i>Bauhinia variegata</i> Linn	Caesalpinaceae	Budhist bauhinia	Tree	5
10.	<i>Cassia fistula</i> Linn	Caesalpinaceae	Golden showers	Tree	12
11.	<i>Citrus aurantium</i> Linn	Rutaceae	Citrus tree	Tree	5
12.	<i>Cocos nucifera</i> Linn	Arecaceae	Coconut tree	Tree	15
13.	<i>Delonix regia</i> (Boijer) Rafin.	Caesalpinaceae	Flame tree	Tree	15
14.	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Gooseberry	Tree	5
15.	<i>Eucalyptus citriodora</i> Hook	Myrtaceae	Lemon scented gum	Tree	20
16.	<i>Ficus benghalensis</i> Linn	Moraceae	Banyan tree	Tree	20
17.	<i>Ixora undulate</i>	Rubiaceae	Ixora	Tree	6
18.	<i>Madhuca longifolia</i> (Koen)	Sapotaceae	The butter tree	Tree	15
19.	<i>Mangifera indica</i> Linn	Anacardiaceae	Mango tree	Tree	15
20.	<i>Nerium indicum</i>	Apocynaceae	Pink oleander	Shrub	5
21.	<i>Peltophorum</i> <i>pterocarpum</i>	Caesalpinaceae	Copper pod tree	Tree	20
22.	<i>Polythia longifolia</i>	Anonaceae	Ashoka tree	Tree	20
23.	<i>Terminalia catappa</i>	Combretaceae	The Indian almond	Tree	10

S.No	Botanical Name	Family	Common Name	Habitat	Height (m)
24.	<i>Anacardium occidentale</i>	Anacardiaceae	Kaju	Tree	10
25.	<i>Syzygium cumini</i>	Myrtaceae	Jamun	Tree	20
26.	<i>Tectona grandis</i>	Lamiaceae	Sagwan	Tree	5
27.	<i>Ficus benghalensis</i>	Moraceae	Banyan	Tree	10
28.	<i>Psidium guajava</i>	Myrtaceae	Guava	Tree	5
29.	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Kendu	Tree	10
30.	<i>Millettia pinnata</i>	Fabaceae	Karanj	Tree	15
31.	<i>Phyllanthusemblica</i>	Phyllanthaceae	Amla	Tree	10
32.	<i>Senna siamea</i>	Caesalpiniaceae	Casia Cemla	Tree	10
33.	<i>Tamarindus indica</i>	Leguminosae	Tamarind	Tree	10
34.	<i>Delonix regia</i>	Caesalpiniaceae	Gulmohar	Tree	15
35.	<i>Ficus religiosa</i>	Moraceae	Peepal	Tree	5
36.	<i>Schleichera oleosa</i>	Sapindaceae	Kusum	Tree	10
37.	<i>Schotia brachypetala</i>	Fabaceae	Boer	Tree	20
38.	<i>Dalbergia sissoo</i>	Fabaceae	Shisham	Tree	5

REGULATIONS FOR GREENBELT DEVELOPMENT

Environmental Guidelines for Industries, created by the MoEF, recommend corporations undertake environmental protection seriously and work to reduce the negative effects of their operations both locally and beyond. As a result, these regulations require project owners to keep certain distances between their companies and places like ecologically sensitive areas, coastal areas, flood plains of riverine systems, transportation and communication systems, and major settlements.

These rules also require that, when citing industry, economic and social factors be acknowledged and evaluated. The following are the main guidelines that all industries must adhere to when establishing manufacturing or processing facilities in specific locations, which are;

1. No forest land shall be converted into non-forest activity for the sustenance of the industry.
2. No prime agricultural land shall be converted into industrial site.
3. Within the acquired site the industry must locate itself at the lowest location to remain obscured from general sight.
4. Land acquired shall be sufficiently large to provide space for appropriate treatment of waste water still left for treatment after maximum possible reuse and recycle. Reclaimed (treated) wastewater shall be used to raise **green belt** and to create water body for aesthetics, recreation and if possible for aquaculture. **The green belt shall be 1/2 km wide around the battery limit of the industry. For industry having odour problem it shall be a kilometer wide.**
5. **The green belt between two adjoining large scale industries shall be one kilometer.**
6. Enough space should be provided for storage of solid wastes so that these could be available for possible reuse.
7. Lay out and form of the industry that may come up in the area must conform to the landscape of the area without affecting the scenic features of that place.
8. Associated township of the industry must be created at a space having physiographic barrier between the industry and the township.
9. Each industry is required to maintain three ambient air quality measuring stations within 120 degree angle between stations.

Environment Management Plan (EMP) prepared by **MoEF** mandates that community buildings and townships should build 1-1.5 kilometer of greenbelt. This is suggested to restrict air and noise pollution in the vicinity.

As per the stipulations of MoEF, **green belt is to be provided all around the power station boundary by planting trees** and the total green area including landscaping area will be 1/3rd (About 33%) of the plant area. This will include Lay down area which will be later on converted into Green area.

In India, there is no exclusive green belt regulation/policy. However, under the purview of other regulations such as Environmental Guidelines for Industries, Environment Management Plan, National Forest Policy, Forest Conservation Act, etc; certain percentage of land designated for green belts is recommended for different categories of industrial projects. Expansion of agricultural, urban and industrial activities are causing additional burden on natural resources. Industrial development is causing severe health hazards due the exceeded level of pollution. Green belt not only restrict environmental pollution but it helps to maintain the ecological balance of the region.

PROVISION OF GREENBELT FOR INDUSTRIES

Adequate greenery in industrial establishment helps in creating better environment in many ways:

1. It provides a sylvan surrounding to improve the aesthetical conditions which, in turn, improve the working condition of the workers.
2. Tall trees attract birds to roost and also provide shelter to small creatures like squirrel, snakes etc. thus biodiversity is restored.
3. A properly designed green belt of adequate width acts as a filter of our pollutants for outside. Fugitive emissions are mainly controlled by the green belt.
4. Plantation of pollution indicating species at strategic locations can indicate the air pollution status of the area. These plant species are sensitive to air pollutants. Such species serves as "bio indicators".
5. Green belt acts as a noise barrier for outside.
6. Treated waste water of an industry is always recommended for maximum utilization within the premises. If the waste water is used for irrigation of green belt and other plantation within, the objective is partially achieved.

PLANNING OF GREENBELT

Planting of green belt requires the following considerations:-

1. Choice of the species
2. Design of the belt
3. Width of belt

Choice of the plants species depends upon the nature of fugitive gaseous pollutants coming from the industries. Obviously those plants should be resistant to the pollutants. Besides, trees with large crown are preferred because they served as a good barriers for particulate and gaseous emissions. In between the resistant, species and within the industrial premises, some strategic locations as these species indicate the status of pollution.

The design of the greenbelt should be such that it should form an effective shield against pollutants to outside. A three tier plantation of small medium and large size plants can achieve the same. Typical 50 m width green belt may have 3 layers may consist of bushes (small tree). The inner layer may have large tree with good crown and under growth. The middle layer in between can have bushes and shrubs (small and medium size tree).

The width of the green belt should be carefully & judiciously decided; because of the cost of the land there is always a demand from the industry to a narrow belt. Ideally the width should be such to have maximum attenuation. The attenuation factor can be expressed as :

$$AF = \frac{\text{Pollution level at a point a just outside without the greenbelt}}{\text{Pollution level at a with the green belt}}$$

The attenuation factor for a well-designed green belt attains a limiting value after a certain width and becomes more effective with the increasing height at trees. For the green belt, with Indian trees species (tropical forest species) longer width may not be necessary for maximum attenuation.

Generally for a large industry, a belt width of 150 – 200 mtrs may beadequate but these can be increased where pollution level is high. For a less polluting industry, a belt less than 150 mtr can also do.

The design and nature of green belts will vary according to the place and the type of industry. Some of the factors which influence the design of green belts are-

- Climatic factors such as wind velocity, temperature, rainfall, sunlight, humidity etc.
- Assimilation capacity of the ecosystem.
- Height and canopy of trees.
- Topography.
- Size of land available.
- Distance from source.
- Soil and Water quality.
- Nature and extend of pollutants.

ADVANTAGES OF GREENBELTS

- **Noise control-** A green belt reduces the intensity of sound. Function as a barrier. Trees can either deflect, refract or may absorb sound to reduce its intensity. The intensity reduction depends on the distance sound has to travel from source. Trees can also modify suitably the humidity and climate which affects sound intensity.
- Help in **soil erosion control**. Plant species help in improving soil quality and bind soil particles thereby preventing erosion. Green belts also help in containing water run offs.
- **Climate Control**
- **Air Pollution control-** Trees help in removing carbon dioxide and other pollutants from air and by release of oxygen into the air thereby improving air quality. A green belt development can also help in removing particulate matter from the air by trapping such particulate matter.
- **Water Pollution control-** Some species can remove some pollutants from water. Example- copper absorbed by *Chlorella vulgaris* and Scandium by *Astragalus*, zinc by *Typhalatifolia*, chromium by *Salvinianudans*.

LAYOUT OF PLANT



Plantation Details: M/s Bharat Aluminium Co. Ltd (BALCO) Korba (C.G.)

Year	BALCO PLANT & TOWNSHIP		BCPP		Total saplings including BALCO & BCPP	No of saplings Survived	Percentage Survived %	Location	Species
	No of Sapling planted BALCO	Area in Acre	No of sapling planted BCPP	BCPP Area in Acre					
2002-03	55000	54	10000	10	65000	51745	80	Plant boundary wall plantation sites, inside township, BCPP township, plant and ash cyke area and roads side of plant and township.	Sagwan, Karanj Sarai, Nilgiri, subabul, Gulmohar, Mango and Fruit bearing saplings
2003-04	30000	29	10000	10	40000	33252	83		
2004-05	11000	10	21000	21	32000	25335	79		
2005-06	57000	56	10000	10	67000	53278	80		
2006-07	130000	128	5000	5	135000	106782	79		
2007-08	35000	32	5000	5	40000	33600	84		
2008-09	13000	12	1000	1	14000	11276	81	BCPP plant and township plantation area	Sagwan, Karanj Sarai, Nilgiri, Subabul, Gulmohar, Mango and Fruit bearing saplings
2009-10	53500	52.5	1500	1	55000	40100	73	Township and Hariyar Chhattisgarh plantation programme (Roadside plantation in Devpahari road)	Sagwan, Karanj Sarai, Nilgiri, subabul, Gulmohar, Mango and fruit bearing saplings
2010-11	54850	54	150	0	55000	39870	72	Hariyar Chhattisgarh plantation programme, BCPP	Sagwan, Karanj, Sarai, Nilgiri, subabul, Gulmohar, Mango and fruit bearing saplings
2011-12	20000	18.5	0	0	20000	16875	84	Near Stadium, Joggers Park	Ashoka, Sagwan, Karanj, Gulmohar
2012-13	5600	5	0	0	5600	4826	86	Near Kali Mandir	Karanj, Gulmohar
2013-14	4150	4	650	0.65	4800	4025	84	Inside Plant, BCPP Ash Dykes, DPS School	Karanj, Neer Gulmohar, Guava
2014-15	35700	34	0	0	35700	30638	86	Lalghat plantation area, Inside Roads	Karanj, Sagwan, mix Fruit plants



2015-16	30000	28	0	0	0	30000	25434	85	Near township office, ash dykes, cooling tower inside / outside, ETP, boundary wall 1200 MW, Behind alumina plant	Karanj. Sagwan, mix fruits bearing plants
2016-17	30000	28	0	0	0	30000	25500	85	Balco Plant and around township	Karanj. Satwan, Gulmohar, Guvava, Jamun, Sehtut, Sagwan
2017-18	5000	4	0	0	0	5000	4100	82	In and around plant and township	Karanj. Gulmohar, Guvava, Jamun, Sehtut, Sagwan, Mango, Jamun
2018-19	5000	4	0	0	0	5000	4000	80	In and around plant and township	Karanj. Satwan, Gulmohar, Guvava, Jamun, Sehtut, Sagwan, Mango, Jamun, Black Sirus, Neem
2019-20	15000	13	0	0	0	15000	12900	86	Near ash dyke, township and plant premises	Karanj. Satwan, Mango, Gulmohar, Bamboo, Amla, Neem
2020-21	10000	9	0	0	0	10000	8420	84	Ash dyke 3 Band at STP area	Karanj. Satwan, Mango, Gulmohar, Bamboo, Amla, Neem
2021-22	14700	10	0	0	0	14700	12789	87	Hospital premises, township area	Neem, Shesham, Amsol, Karanj. Kesiya Samiya
2022-23	8887	96	34675	37	123562	106263	106263	86	Ash dykes, BCPP Ash Dykes	Neem, Shesham, Amsol, Karanj. Kesiya Samiya
2023-24	53936	53	31175	30	85111	74047	74047	87	Area between dyke, BCPP Ash Dykes	Neem, Karanj, kesiya semiya, Mango, Shesham, Amsol
Total*	757323	734	130150	131	887473	725055	82			

***Above details are for overall plantation carried out at Balco Nagar, Korba location which include statutory compliance for plantation for individual units of M/s BALCO Korba.**



CONCLUSION

The Survival percentile of plantation done by "M/S Bharat Aluminium Company Limited, Korba" upto March 2024 is about 82% which is **Excellent** for the company. The overall growth of plantation was **satisfactory** as the company actively manages the greenbelt development very well.

The greenbelt coverage for BALCO Complex is 37.32% with respect to the land in possession (excluding encroachment). Similarly, the greenbelt coverage for BCPP is 57.38%.

The official staff of the company were co-operative, enthusiastic and helpful towards the work. We convey our best regards to the environmental branch of the company for successful greenbelt development following the norms of MoEFCC, Govt of India and Govt of Chhattisgarh.

GRADING (ON SCALE OF 1 to 10)

GRADING	Excellent (8-10)	Very Good (5-8)	Good (3-5)	Poor (<3)
	8.2			



ON SITE PHOTOGRAPHS







==END OF REPORT==

GREEN BELT DEVELOPMENT

Name of the Species Planted

Dalbergia latifolia (**sheeshm**), Mangifera Indica (**Mango**), Jamarindus Indica, Dehonix Regia(**Gulmohar**), Madhuca Indica (**Mahuwa**), Emblica Officinalis (**Amala**), Syzygium Cumini (**Jamun**), Azadirachta Indica (**Neem**), Grevillea Rebusta (**Silver oak**) **Karanj**, (**Amaltash**), Ficus Religiosa (**Pipal**), Leucaena Leucoophala (**Subabul**) etc.

YEAR	BALCO		BCPP		Total	
	<i>No of sapling</i>	<i>Area in Acres</i>	<i>No of sapling</i>	<i>Area in Acres</i>	<i>No of sapling</i>	<i>Area in Acres</i>
2002-03	55000	54	10000	10	65000	64
2003-04	30000	29	10000	10	40000	39
2004-05	11000	10	21000	21	32000	31
2005-06	57000	56	10000	10	67000	66
2006-07	130000	128	5000	5	135000	134
2007-08	35000	32	5000	5	40000	37
2008-09	13000	12	1000	1	14000	13
2009-10	53500	52.5	1500	1	55000	53.5
2010-11	54850	54	150	0	55000	54
2011-12	20000	20	-	-	20000	20
2012-13	5600	5	-	-	5600	5
2013-14	4150	4	650	0.65	4800	4.65
2014-15	35700	35.6	-	-	35700	35.6
2015-16	30000	28	-	-	30000	28
2016-17	30000	28			30000	28
2017-18	5000	4	-	-	5000	4
2018-19	5000	4	-	-	5000	4
2019-20	15000	13			15000	13
2020-21	10000	9	-	-	10000	9
2021-22	14700	10	-	-	14700	10
2022-23	88887	96	34675	37	123562	133
2023-24	53936	53	31175	30	85111	83
2024-25	48023	2.5	-	-	48023	2.5

Aluminium Smelter Plant**Status of Action Points CREP Guidelines recommended for Aluminium Smelter**

Sl. No.	Issues	Action Point	Compliance Status
1	Technology	Allowing Pot lines only with Pre-baked Technology. Environment clearance new pot lines to be given by MoEF, after June 2003, only with prebaked technology	Old Soderberg type of Smelter has been phased out during the year 2009. BALCO has adopted Pre-baked GAMI technology for Aluminium Smelting in its new pot lines operating at present
2	Fluoride Emissions	Prescribing maximum size of the plant. Maximum size of the plant shall be decided based on the assimilative capacity of each plant location. Revision of fluoride emission standard. For Soderberg Technology 2.8 kg/t by December 2005 [1.0kg/t (VCS) & 1.30 kg/t 9HSS) by December 2010] Phasing out Wet Scrubbing System for Fluoride. For Pre-baked Technology 0.8 kg/T by December 2006 Allowing new Pot lines only with Dry Scrubbing System Environmental clearance for new pot lines shall be given by MoEF, after June 2003, only with Dry Scrubbing System. Monitoring of fugitive emissions from pot rooms To start with Indal or any other better method & submit data from January 2004, regularly to SPCBs & CPCB	- BALCO is operating pre-baked Aluminium smelter. FTPs with dry scrubbing systems have been installed in smelter & the total fluoride emission from the smelter is within the range of 0.8 Kg/T of Al. produced. BALCO has installed FTPs with dry scrubbing system in Pot lines. Fugitive fluoride is being monitored and reports being submitted to CECB monthly and to Ministry with half Yearly compliance report.
3	Fluoride Consumption	Fluoride consumption tonne of aluminum produced (as F)	CREP (Corporate Responsibility for Environmental

		[For Soderberg Technology 15 kg/t by December 2005 For Pre-baked technology 10kg/t by December 2005]	Protection) recommendation prescribing Specific Fluoride consumption less than 10 kg/ton of aluminium has been amended to specific AlF₃ consumption less than 20 kg/ton of aluminium as per the Gazette Notification dated 21st July 2025 under the Environment (Protection) Fifth Amendment Rules, 2025, issued by the Ministry of Environment, Forest and Climate Change, Government of India. The revised standard replaces the earlier entry under Serial No. 36 of Schedule I of the Environment (Protection) Rules, 1986 and we will be complying to the same.
4	Ambient Fluoride	Forage fluoride standards (Dry weight basis) * Twelve consecutive months average-40 ppm * Two consecutive months Average- 60 ppm * One month – 80 ppm Measurement of forage Fluoride To start monitoring and submit data from January 2004, regularly to SPCBs & CPCB. The locations of monitoring may be selected in collaboration with SPCBs & CPCB	Forage fluoride in the surrounding areas /villages is being measured and analyzed by a third party NABL accredited Lab. Reports are submitted to CECB monthly and to Ministry with half yearly compliance report.
5	Spent Pot Lining (SPL)	Setting up a centralized SPL treatment & disposal facility with aluminum fluoride recovery and utilization of SPL in steel/ cement industries Limit for pot life, (for new pots installed after December 31, 2003 2500 day (average)	As per CPCB approved SOP, treatment and detoxification of SPL-Carbon through authorized co-processors is being carried out. The authorized co-processor supplies the SPL Carbon to cement /steel plant after detoxification as per SOP. BALCO has adopted Pre-baked technology with 320/340 KA line current. We are trying to maximize the lining life to an average of 2500 days.

		SPL (Carbon & Refractory) to be disposed in Secured Landfill	The SPL-Carbon portion generated from smelt Annexure-A (Contd....) authorized COPROCESSOR M/s. Greenmac Technology at Raipur, M/s Shubham Sales Co., Rohtak, M/s Ambuja Cement Limited, Bhatapara, M/s ACC Limited Jamul, M/s Gati Greens India Private Limited and M/s Raipur Grinding Corporation for detoxification which in turn is sending the detoxified material for further utilization in various industries including cement and steel. The SPL refractory stored in covered sheds with concrete floor as currently there is no approved SOP by CPCB for utilization of SPL refractory. However, we have requested CPCB to share with us the SOP, if and as and when available, vide our letter dated 31.01.2024, 22.03.2024, 23.09.2024 ,09.01.2025, 05.05.2025 and 26.09.2025 to comply with the given condition. We will be diluting the legacy SPL refractory within 18 months after the issue of the approved SOP from CPCB.
6	Red Mud	Phasing Wet disposal Red Mud utilization To achieve minimum 50% solids in red mud by Dec. 2005 A proposal for practical utilization to be prepared by Aluminium Association of India within six months	Not Applicable for BALCO at present.
7	Anode Baking Oven	Achieving particulate matter limit of 50 mg/Nm ³ by Dec. 2005	Particulate emission from Anode Bake Oven is within 50 mg/Nm ³ .

Thermal Power Plant

Status of Action Points CREP Guidelines recommended for Thermal Power Plant

Sl. No.	Action Point	Compliance Status
1	Implementation of Environmental Standards (emission & effluent) in non-compliant Power Plants (31 & 27) • Submission of action plan : June 30, 2003 • Placement of order for Pollution of control equipment : September, 2003 • Installation & commission: December 31, 2005.	Not applicable
2	For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm ³ . The studies shall also suggest the road map to meet 100 mg/Nm ³ wherever found feasible. CEA shall submit the report by March 2004.	Not applicable
3	New / expansion power projects to be accorded environmental clearance on or after 1.1.2003 shall meet the limit of 100 mg/Nm ³ for particulate matter.	Hybrid ESP's have been commissioned and emissions are maintained below the stipulated standards of 50 mg/NM ³ .
4	Development of SO₂ & NO_x emission standards for coal based plants by December 2003. • New/ expansion power projects shall meet the limit of SO₂ & NO_x w.e.f. 1.1.2005. • Existing power plants shall meet the limit of SO₂ & NO_x w.e.f. 1.1.2006.	The timeline for SO₂ has been extended for 3 years and for BALCO, it has been extended up to 31 December 2028 vide MoEF&CC gazette notification dated 30 December 2024. Complied with Nox emission.

5	Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.	Continuous online monitors have already been installed in all the units. Proper calibration schedules are being followed for calibration of the instruments.
6	Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.	Complied.
7	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003	Complied.
8	Implementation of use of beneficiated coal as per GOI Notification: Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure. Options/mechanism for setting up of coal washeries as a long term measure • Coal India will up its own washery • State Electricity Board to set up its own washery • Coal India to ask private entrepreneurs to set up washeries for CIL and taking washing charges • SEBs to select a private entrepreneur to set up a washery near pit- head installation of coal beneficiation plant	Not applicable
9	Power plants will indicate their requirement of abandoned coal mines for ash disposal & Coal India/ MOC shall provide the list of abandoned mines by June 2003 to CEA	Complied.
10	Power plants will provide dry ash to the users outside the premises or uninterrupted access to the users within six months.	We are utilizing fly ash in different avenues like Road Construction, NHAI, Cement Industry, Brick Manufacturing Units and Mine void filling.
11	Power Plants should provide dry fly ash free of cost to the users	We have provision of supplying dry fly ash free of cost for other users.
12	State P.W.Ds/ construction & development agencies shall also adhere to the specifications/Schedules of CPWD for ash based products utilization MoEF will take up the matter with State Governments.	Not applicable
13	(i) New plants to be accorded environmental clearance on or after	The unit has adopted High Concentration Slurry Disposal (HCSD) method for ash

	1.04.2003 shall adopt dry fly ash extraction or dry disposal system or Medium (35-40%) ash concentration slurry disposal system or Lean phase with hundred percent ash water re-circulation system depending upon site specific environmental situation. (ii) Existing plants shall adopt any of the systems mentioned in 13 (i) by December 2004.	disposal. The consistency of 60% solid is maintained.
14	Fly ash Mission shall prepare guidelines/manuals for fly ash utilization by March 2004.	Noted.
15	New plants shall promote adoption of clean coal and clean power generation technologies	Noted.

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ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number:		VLL/VLS/25-26/02532/001
KORBA (C.G)				Issue Date:		2025-05-05
				P.O. No:		8500005780
				P.O. Date:		2022-06-29
AMBIENT NOISE MONITORING AT PLANT - 1 AREA						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-04-08	Norms in dB(Night)	2025-04-08
				6:00 to 22.00		22:00 to 6.00
1	Time office(Fab.)	dB	75	51.1	70	46.9
2	Gate Smelter Store	dB	75	48.6	70	43.8
3	MRSDS	dB	75	55.5	70	48.4
4	Petrol Pump	dB	75	65.5	70	62.1
5	Garrage	dB	75	61.7	70	55.2
6	Alumina Canteen	dB	75	54.6	70	51.1
7	Work Shop	dB	75	57.5	70	44.3
8	Engg. Building	dB	75	47.6	70	40.3
9	Bauxite Yard	dB	75	60.1	70	56.4
10	Plant Lab.	dB	75	56.1	70	55.5
11	Alumina Gate	dB	75	56.2	70	45.4
12	Parsabhata Main Gate	dB	75	62.8	70	55.1



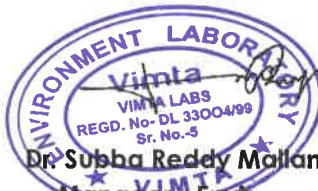
Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

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ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number: VLL/VLS/25-26/02532/002		
KORBA (C.G)				Issue Date: 2025-05-05		
				P.O. No: 8500005780		
				P.O. Date: 2022-06-29		
AMBIENT NOISE MONITORING AT 2.7 LTPA SMELTER						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-04-04	Norms in dB(Night)	2025-04-04
				6:00 to 22.00		22.00 to 6.00
1	Pot room road side near lounge room (SEC-8)	dB	75	62.1	70	58.9
2	Cast house 1 outside of main gate	dB	75	65.7	70	61.6
3	Cast house 2 outside of main gate	dB	75	62.1	70	56.8
4	Cast house 3 outside of main gate	dB	75	58.8	70	58.3
5	Rectifier road side	dB	75	58.4	70	56.8
6	GAP ground floor road side	dB	75	70.2	70	66.5
7	Rodding shop parking area	dB	75	68.1	70	66.9
8	Bake oven in front of FTP	dB	75	70.1	70	67.6


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**M/s. Bharat Aluminium Company Limited
KORBA (C.G)**

Report Number: VLL/VLS/25-26/04458/001

Issue Date: 2025-06-04

P.O. No: 8500005780

P.O. Date: 2022-06-29

AMBIENT NOISE MONITORING AT PLANT - 1 AREA

Tests required: Sound Level

SAMPLES COLLECTED BY VIMTA LABS LTD

LAB REF.: EC

TEST RESULTS

S. No	Location	Unit	Norms in dB(Day)	2025-05-07	Norms in dB(Night)	2025-05-07
				6:00 to 22:00		22:00 to 6.00
1	Time office(Fab.)	dB	75	50.8	70	46.9
2	Gate Smelter Store	dB	75	48.3	70	44.5
3	MRSDS	dB	75	55.1	70	48.2
4	Petrol Pump	dB	75	65.6	70	62.9
5	Garrage	dB	75	61.4	70	55.5
6	Alumina Canteen	dB	75	54.7	70	52.0
7	Work Shop	dB	75	57.8	70	45.1
8	Engg. Building	dB	75	47.2	70	40.8
9	Bauxite Yard	dB	75	59.2	70	56.7
10	Plant Lab.	dB	75	55.6	70	56.5
11	Alumina Gate	dB	75	55.8	70	47.1
12	Parsabhata Main Gate	dB	75	62.6	70	55.4



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M/s. Bharat Aluminium Company Limited
KORBA (C.G)

Report Number: VLL/VLS/25-26/04458/003

Issue Date: 2025-06-04

P.O. No: 8500005780

P.O. Date: 2022-06-29

AMBIENT NOISE MONITORING AT 3.25 LTPA SMELTER

Tests required: Sound Level

SAMPLES COLLECTED BY VIMTA LABS LTD

LAB REF.: EC

TEST RESULTS

S. No	Location	Unit	Norms in dB(Day)	2025-05-27	Norms in dB(Night)	2025-05-27
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	55.5	70	54.8
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	57.3	70	55.6
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	58.2	70	56.5
4	Control room GIS	dB	75	50.9	70	49.3
5	CRP room GIS	dB	75	60.5	70	55.6



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KORBA (C.G)****Report Number: VLL/VLS/25-26/06982/001****Issue Date: 2025-07-05****P.O. No: 8500005780****P.O. Date: 2022-06-29****AMBIENT NOISE MONITORING AT PLANT - 1 AREA****Tests required: Sound Level****SAMPLES COLLECTED BY VIMTA LABS LTD****LAB REF.: EC****TEST RESULTS**

S. No	Location	Unit	Norms in dB(Day)	2025-06-02	Norms in dB(Night)	2025-06-02
				6:00 to 22:00		22:00 to 6:00
1	Time office(Fab.)	dB	75	50.9	70	47.4
2	Gate Smelter Store	dB	75	48.7	70	45.3
3	MRSDS	dB	75	56.1	70	47.9
4	Petrol Pump	dB	75	65.8	70	63.2
5	Garrage	dB	75	62.1	70	56.2
6	Alumina Canteen	dB	75	54.6	70	51.3
7	Work Shop	dB	75	58.0	70	44.0
8	Engg. Building	dB	75	48.3	70	41.6
9	Bauxite Yard	dB	75	58.8	70	58.6
10	Plant Lab.	dB	75	55.2	70	53.5
11	Alumina Gate	dB	75	53.5	70	45.2
12	Parsabhata Main Gate	dB	75	61.2	70	53.0

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M/s. Bharat Aluminium Company Limited				Issue Date: 2025-07-05		
KORBA (C.G)				P.O. No: 8500005780		
				P.O. Date: 2022-06-29		
AMBIEANT NOISE MONITORING AT 2.7 LTPA SMELTER						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-06-09	Norms in dB(Night)	2025-06-09
				6:00 to 22.00		22.00 to 6.00
1	Pot room road side near lounge room (SEC-8)	dB	75	61.5	70	59.6
2	Cast house 1 outside of main gate	dB	75	64.7	70	60.4
3	Cast house 2 outside of main gate	dB	75	61.6	70	59.0
4	Cast house 3 outside of main gate	dB	75	59.3	70	59.3
5	Rectifier road side	dB	75	59.0	70	56.8
6	GAP ground floor road side	dB	75	72.1	70	66.2
7	Rodding shop parking area	dB	75	67.3	70	65.3
8	Bake oven in front of FTP	dB	75	70.5	70	68.9

**Dr. Subba Reddy Mallampati**
Manager- Environment

ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number:	VLL/VLS/25-26/09740/001	
KORBA (C.G)				Issue Date:	2025-08-05	
				P.O. No:	8500005780	
				P.O. Date:	2022-06-29	
AMBIENT NOISE MONITORING AT PLANT - 1 AREA						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-07-02	Norms in dB(Night)	2025-07-02
				6:00 to 22.00		22:00 to 6.00
1	Time office(Fab.)	dB	75	51.4	70	48.1
2	Gate Smelter Store	dB	75	52.0	70	46.2
3	MRSDS	dB	75	56.9	70	49.9
4	Petrol Pump	dB	75	67.6	70	64.5
5	Garrage	dB	75	62.5	70	57.3
6	Alumina Canteen	dB	75	56.7	70	51.7
7	Work Shop	dB	75	58.6	70	45.9
8	Engg. Building	dB	75	49.2	70	42.2
9	Bauxite Yard	dB	75	59.9	70	58.3
10	Plant Lab.	dB	75	55.7	70	52.7
11	Alumina Gate	dB	75	54.7	70	45.8
12	Parsabhata Main Gate	dB	75	60.8	70	53.9


Dr. Subba Reddy Mallampati
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ISSUED TO						
M/s. Bharat Aluminium Company Limited				Report Number:	VLL/VLS/25-26/09740/002	
KORBA (C.G)				Issue Date:	2025-08-05	
				P.O. No:	8500005780	
				P.O. Date:	2022-06-29	
AMBIEANT NOISE MONITORING AT 2.7 LTPA SMELTER						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-07-08	Norms in dB(Night)	2025-07-08
				6:00 to 22.00		22.00 to 6.00
1	Pot room road side near lounge room (SEC-8)	dB	75	60.8	70	58.5
2	Cast house 1 outside of main gate	dB	75	64.6	70	60.7
3	Cast house 2 outside of main gate	dB	75	60.5	70	58.6
4	Cast house 3 outside of main gate	dB	75	59.0	70	58.7
5	Rectifier road side	dB	75	59.2	70	57.2
6	GAP ground floor road side	dB	75	71.9	70	67.8
7	Rodding shop parking area	dB	75	67.6	70	65.4
8	Bake oven in front of FTP	dB	75	71.1	70	68.6


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Sr. No.-5
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KORBA (C.G)****Report Number: VLL/VLS/25-26/11867/001****Issue Date: 2025-09-04****P.O. No: 8500005780****P.O. Date: 2022-06-29****AMBIENT NOISE MONITORING AT PLANT - 1 AREA****Tests required: Sound Level****SAMPLES COLLECTED BY VIMTA LABS LTD****LAB REF.: EC****TEST RESULTS**

S. No	Location	Unit	Norms in dB(Day)	2025-08-05	Norms in dB(Night)	2025-08-05
				6:00 to 22.00		22:00 to 6.00
1	Time office(Fab.)	dB	75	51.6	70	47.0
2	Gate Smelter Store	dB	75	51.9	70	45.2
3	MRSDS	dB	75	57.5	70	50.8
4	Petrol Pump	dB	75	67.7	70	64.8
5	Garrage	dB	75	62.2	70	58.3
6	Alumina Canteen	dB	75	58.1	70	50.7
7	Work Shop	dB	75	59.7	70	45.5
8	Engg. Building	dB	75	50.3	70	42.3
9	Bauxite Yard	dB	75	60.8	70	58.8
10	Plant Lab.	dB	75	56.8	70	52.3
11	Alumina Gate	dB	75	56.1	70	46.8
12	Parsabhata Main Gate	dB	75	61.6	70	54.4

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KORBA (C.G)				Issue Date: 2025-09-04		
				P.O. No: 8500005780		
				P.O. Date: 2022-06-29		
AMBIENT NOISE MONITORING AT 2.7 LTPA SMELTER						
Tests required: Sound Level						
SAMPLES COLLECTED BY VIMTA LABS LTD				LAB REF.: EC		
TEST RESULTS						
S. No	Location	Unit	Norms in dB(Day)	2025-08-07	Norms in dB(Night)	2025-08-07
				6:00 to 22.00		22.00 to 6.00
1	Pot room road side near lounge room (SEC-8)	dB	75	63.1	70	57.7
2	Cast house 1 outside of main gate	dB	75	65.7	70	60.1
3	Cast house 2 outside of main gate	dB	75	62.3	70	58.2
4	Cast house 3 outside of main gate	dB	75	60.4	70	59.0
5	Rectifier road side	dB	75	60.2	70	55.0
6	GAP ground floor road side	dB	75	72.4	70	67.9
7	Rodding shop parking area	dB	75	68.8	70	66.6
8	Bake oven in front of FTP	dB	75	72.1	70	66.7



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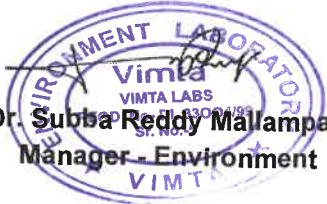
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ISSUED TO**M/s. Bharat Aluminium Company Limited
KORBA (C.G)****Report Number: VLL/VLS/25-26/14073/001****Issue Date: 2025-10-04****P.O. No: 8500005780****P.O. Date: 2022-06-29****AMBIENT NOISE MONITORING AT PLANT - 1 AREA****Tests required: Sound Level****SAMPLES COLLECTED BY VIMTA LABS LTD****LAB REF.: EC****TEST RESULTS**

S. No	Location	Unit	Norms in dB(Day)	2025-09-02	Norms in dB(Night)	2025-09-02
				6:00 to 22.00		22:00 to 6.00
1	Time office(Fab.)	dB	75	51.0	70	47.9
2	Gate Smelter Store	dB	75	51.1	70	43.5
3	MRSDS	dB	75	58.3	70	48.7
4	Petrol Pump	dB	75	64.6	70	61.0
5	Garrage	dB	75	62.5	70	56.6
6	Alumina Canteen	dB	75	55.4	70	49.7
7	Work Shop	dB	75	53.5	70	43.9
8	Engg. Building	dB	75	48.3	70	41.5
9	Bauxite Yard	dB	75	48.5	70	40.5
10	Plant Lab.	dB	75	53.3	70	50.1
11	Alumina Gate	dB	75	56.4	70	48.3
12	Parsabhata Main Gate	dB	75	62.6	70	54.6


Dr. Subba Reddy Mallampati
Manager - Environment

Sensitivity: Internal (C3)

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ISSUED TO

M/s. Bharat Aluminium Company Limited
KORBA (C.G)

Report Number: **VLL/VLS/25-26/14073/002**Issue Date: **2025-10-04**P.O. No: **8500005780**P.O. Date: **2022-06-29****AMBIENT NOISE MONITORING AT 2.7 LTPA SMELTER**

Tests required: Sound Level

SAMPLES COLLECTED BY VIMTA LABS LTD

LAB REF.: EC

TEST RESULTS

S. No	Location	Unit	Norms in dB(Day)	2025-09-04	Norms in dB(Night)	2025-09-04
				6:00 to 22.00		22.00 to 6.00
1	Pot room road side near lounge room (SEC-8)	dB	75	62.3	70	58.2
2	Cast house 1 outside of main gate	dB	75	63.7	70	59.3
3	Cast house 2 outside of main gate	dB	75	61.2	70	59.0
4	Cast house 3 outside of main gate	dB	75	62.2	70	58.0
5	Rectifier road side	dB	75	60.3	70	55.1
6	GAP ground floor road side	dB	75	70.7	70	65.5
7	Rodding shop parking area	dB	75	67.6	70	65.8
8	Bake oven in front of FTP	dB	75	71.6	70	66.3


Dr. Subba Reddy Mallampati
 Manager - Environment


Sensitivity: Internal (C3)

BALCO/ENV/A-02(A)/2025/267

Date: 23.05.2025

To,
The Integrated Regional Office (IRO),
Ministry of Environment, Forest & Climate Change,
Aranya Bhawan,
North Block, Sector-19,
Nava Raipur, Atal Nagar (CG) 492002.

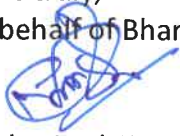
Sub: Half yearly compliance status (October 2024 to March 2025) for Alumina refinery and Aluminium Smelter Plant (Potline-1)- BALCO, Korba (CG).

Respected Sir,

Please find enclosed herewith, the half yearly compliance report of the Environmental Clearance No. J-11011/34/2003-IA II (I) dated 05.11.2003 for Alumina refinery and Aluminium smelter plant of Bharat Aluminium Company Limited.

We hope that the above is in line with the referred Environmental Clearance. In case you require any further information, we will be glad to furnish the same.

Yours truly,
On behalf of Bharat Aluminum Company Ltd.



(Authorized Signatory)

Encl: a/a

Copy to: The Regional Officer, Chhattisgarh Environment Conservation Board, Korba.



2003

नाम निर्देशन प्रक्रिया से संबंधित समस्त कार्य संपादन हेतु विन अविकारियों एवं कर्मचारियों की अहमताई गृहीत है-वे 7 मई से प्रतियदि 10.30 बजे से अपने नियमितस्थान पर अपने कार्यों पर उपस्थित होंगे तथा कार्रवाई स्थिति में 3 बजे से पहले अपनी संपत्ति को नहीं छोड़ेंगे तथा पूर्ण श्रमपूर्वता से अपने दायित्वों का निर्वहन करेंगे। कोई भी अधिकारी कर्मचारी उप विनान्ति निर्वाचन अविकारी की विनान्ति अन्तर्गत कार्यलय से प्रस्थान नहीं करेंगे।

भारत एल्फाबेटिकल लिमिटेड

लोखा, छत्तीसगढ़

पर्यावरण को यह सूचित किया जाता है कि पर्यावरण व इन मंत्रालय भारत सरकार के भारत रण्युमिनिमस के पत्र लिमिटेड (आत का) की रण्युमिनिमस विभागी और स्मेल्ट की विस्ता पर्यावरण का पर्यावरणीय मंत्री दे दो है अनुमति पत्र की प्रति छापीसाद पर्यावरण प्रकरण मंडल और पर्यावरण व इन मंत्रालय की वेबसाइट पर।

कृते, यात एतन्वृत्तिविषय कर्ण
विषये कोटा, उत्तीसाद

CENTRAL Chronicle

CAIRN NOVEMBER 11. 2003

Bharat Aluminium Co. Ltd.
Korba, Chhattisgarh

This is to inform to general public that Ministry of Environment and Forests, Govt. of India has granted Environmental Clearance for Bharat Aluminium Company Limited's (Balco) expansion project of Alumina Refinery and Smelter. Copy of the Clearance letter is available at Chhattisgarh Environment Conservation Board and in the MOEF website <http://envfor.nic.in>.

For Bharat Aluminium Co. Ltd.
Korba, Chhattisgarh.

REPAIR

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2413338 98271-17227

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