

BALCO/ENV/A-02(A)/2026/208

Date: 15.05.2026

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 Report (October 2025 to March 2026) of the expansion of Aluminum Smelter Plant (3.5 to 9.0 LTPA) and Captive Power Plant (300MW) at Korba, Chhattisgarh by BALCO

Respected Sir,

As per the Environmental Clearance (No. J- 11011/123/2007.IA-II (I) dated 16.09.2008 received for the Expansion of Smelter & Power Plant, M/s Bharat Aluminium Company Limited, Korba has set up the smelter plant, phase-1, (3.25 LTPA). Please find enclosed herewith the compliance report along with the necessary supporting documents.

We hope that the above is in line with the provisions stipulated in the Environmental Clearance. If you require any further information, we will be glad to provide the same.

Thanking you,

Yours Truly,

On behalf of Bharat Aluminum Company Ltd.



(Authorized Signatory)

Encl: a/a

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

BOW

**Compliance Status of Expansion of Aluminium Smelter Plant from 3.5 to 9.0 LTPA
and Captive Power Plant 300 MW**

AT-KORBA, CHHATTISGARH BY M/s BHARAT ALUMINIUM CO. LTD (BALCO)

No. J-11011/123/2007-IA-II (I) MoEF&CC dated 16.09.2008

Duration: October 2025 to March 2026

A. SPECIFIC CONDITION

Sl. No.	Conditions	Compliance status
i	<p>The gaseous emissions (PM, SO₂, NO_x, PAH, HC, VOCs, and Fluoride) from various process units shall conform to the standard prescribed from time to time. The CECB 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. The particulate emissions from the bake oven plant shall not exceed 50 mg/Nm³.</p>	<p>Pollution Control devices like bag filters, dry scrubbers and FTPs have been installed to ensure that emissions are well within the permissible limits, including the particulate emissions from bake oven plant.</p> <p>CEMS has been installed in the stacks of all units and the CEMS has been connected with CPCB and CECB servers for real-time continuous data monitoring.</p> <p>The monthly stack monitoring reports are submitted to CECB every month.</p> <p>Copy of monthly stack monitoring reports are attached as Annexure-I.</p>
ii	<p>Electrostatic precipitator (ESP) shall be provided to Captive Power Plant (CPP) to control emissions below 50 mg/Nm³. The company shall provide bag-filters, dry scrubbing system and dust suppression system to control all the emissions including fluoride emissions from all melting and casting units. Tar, dust and fluoride in the fumes shall be controlled in baking furnace by providing dry scrubber. The emissions shall conform to the standards prescribed by the Ministry/CPCB/SPCB whichever is more stringent.</p>	<p>300 MW power plant has not been set up as per EC approval hence the condition “Electrostatic precipitator (ESP) shall be provided to Captive Power Plant (CPP) to control emissions below 50 mg/Nm³” is not applicable.</p> <p>BALCO has installed bag-filters, dry scrubbing system and dust suppression system to control the emissions including Fluoride emissions from all units.</p> <p>Tar, dust and fluoride in the fumes are controlled in baking furnace by the dry scrubber.</p> <p>CEMS has been installed in the consented stacks of all units and the CEMS has been connected with CPCB and CECB servers for real-time continuous data monitoring.</p> <p>The monthly stack monitoring reports are submitted to CECB every month.</p>

		Copy of monthly stack monitoring reports are attached as Annexure – I .
iii	The poly-aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) shall not exceed 2 mg/Nm ³ . The data on PAH shall be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhopal and CECB.	Poly-aromatic hydrocarbons (PAH) from Bake oven plant are regularly monitored and reported to CECB every month which is well within limit. Copy of monthly stack monitoring reports are attached as Annexure – I .
iv	Particulate fluoride emissions shall not be more than 0.65 mg/Nm ³ and fugitive Particulate fluoride emissions from pot room shall not be more than 1.85 mg/Nm ³ .	State of the art technology (Prebaked technology, Ports with point feeder control), has been installed in the smelters. Systems for covering the pots with properly designed hoods and fume treatment plant are in place to ensure Fluoride emissions (Particulate and Fugitive) are within the stipulated norms. Copy of fluoride emission monitoring reports are attached as Annexure –I & Annexure II .
v	Fluoride consumption shall be less than 10 kg/ton of Aluminium produced as specified in the CREP guidelines.	CREP (Corporate Responsibility for Environmental Protection) recommendation prescribing Specific Fluoride consumption less than 10 kg/ton of aluminium has been amended to specific AlF ₃ 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 for FY 26 the specific AlF ₃ consumption was within the prescribed limit .
vi	In-plant control measures like fume extraction and dust extraction system for controlling fugitive emissions from all the material handling/transfer points shall be provided to control dust emissions. Fugitive fluoride emissions from the pot room and in the forage around the smelter complex shall be monitored and data submitted regularly to the Ministry's Regional Office at Bhopal and CECB. Further dry scrubbing system to control the emissions from the pot lines shall be provided.	State of the art technology, PFPB, has been installed in the smelters. System for covering the pots with properly designed hoods, fume treatment plant based on dry scrubbing and bag filter technology and dust suppression and dust extraction systems are 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 attached as Annexure – II and copy of forage Fluoride monitoring reports attached as Annexure – III .
vii	Total water requirement for the expansion from Hasdeo River shall not exceed 1253 m ³ /hr and prior permission for the existing and proposed expansion shall be obtained from the concerned department before	Total water requirement for the expansion from Hasdeo River does not exceed 1253 m ³ /hr. Effluent Treatment Plant with RO system is in place and treated effluent from ETP is being used in the process.

	commissioning of the plant. All the effluent including from cooling tower and de-mineralization plant shall be treated in the effluent treatment plant and treated effluent shall be recycled / reutilized in the process in the smelter and CPP and also for fire protection, dust suppression, green belt development etc. Domestic effluent shall be treated in Sewage Treatment Plant (STP) and treated domestic wastewater will be used for green belt development.	For treatment of domestic effluent, Sewage Treatment plant has been installed and treated water is being used for green belt development.
viii	No effluent shall be discharged outside the premises during the non-monsoon period and during the monsoon period water shall be discharged only after proper treatment and meeting the norms of the CECB/CPCB.	The plant is designed for zero discharge, and treated water is being used in the process. During monsoon season, under emergency situations storm water is discharged conforming to norms.
ix	Regular ground water monitoring shall be carried out by installing Piezometers all around the secured landfill site in consultation with the Chhattisgarh Environment Conservation Board, Central Ground Water Authority and State Ground Water Board and data submitted to the Ministry's Regional Office and CECB.	Piezometers have been installed all around the secured landfill site and ground water monitoring is being carried out every month. The monthly monitoring reports are submitted to CECB every month. Copy of ground water quality monitoring reports are attached as Annexure-IV .
x	Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant. The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed off to the Cement/Steel plants and as minimum as possible to secured landfill. The location and design of the landfill site shall be approved by the CECB as per Hazardous Wastes' (Management and Handling) Rules 1989 and amended in 2003. Leachate collection facilities shall be provided to the secured landfill facility (SLF). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for green belt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.	Anode butts generated from the smelter operations are recycled at Green Anode Plant within the plant premises. For utilizing the Spent Pot Lining (SPL) generated from the Smelter, BALCO has entered into an agreement with following authorized co-processors for detoxification and further usage in cement/steel plants as per Central Pollution Control Board (CPCB) guidelines. Captive SLF for storage of Hazardous Waste is approved by the CECB as per Hazardous and Other Wastes' (Management and Transboundary Movement) Rules 2016. The approved design of captive SLF is attached as Annexures V (Colly) & VI . Dross generated is processed through Dross Processing Units / authorized recyclers having valid consent and authorization as per the guidelines of CECB.

		<p>STP sludge is being used as manure for green belt development.</p> <p>Used oil and batteries are being sold to the authorized recyclers/ re-processors.</p>
xi	<p>Integrated Ash Management Plan shall be prepared for the utilization of fly ash as per Fly Ash Notification, 1999 as amended in 2003 and implemented. A copy of the plan shall be submitted to the Ministry's Regional Office. Fly ash shall be collected pneumatically in silos and used by cement and brick manufacturers for further utilization. Bottom Ash shall be disposed off in ash pond using high concentrated slurry disposal method.</p>	<p>300 MW Power Plant has not been set up, and this clause is not applicable.</p>
xii	<p>Green belt of adequate width and density around the project site shall be developed in 33 % area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/ha.</p>	<p>Extensive tree plantation is being carried out all open spaces available in and around the plant premises. ≈77000 number of saplings have been planted around BALCO's premises including ash dykes, township and plant premises during FY 2026-27. Copy of greenbelt details attached as Annexure-VII.</p>
xiii	<p>Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.</p>	<p>Occupational health surveillance of the employees is being carried out as per the Factories Act and the records are being submitted to the Department of Industrial Health & Safety (Govt. of Chhattisgarh) through the Online Portal (cglabour.nic.in) on regular basis.</p>
xiv	<p>The company shall develop rainwater structures to harvest the run-off water for recharge of ground water in consultation with the Central Ground Water authority/ State Ground Water Board.</p>	<p>Rainwater harvesting system is in place to harvest the run-off water.</p>
xv	<p>All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector shall be strictly implemented.</p>	<p>The compliance status of the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) is attached as Annexure-VIII.</p>
xvi	<p>All the environmental conditions stipulated by the Ministry vide letter no. J-11011/34/2003-1A II (I) dated 5th November 2003 for the Alumina Refinery and Aluminium Smelter Plant shall be complied and regular compliance report submitted to the Ministry's Regional Office at Bhopal.</p>	<p>Compliance status for the environmental conditions stipulated by the Ministry vide letter no. J-11011/34/2003-1A II (I) dated 5th November 2003 for the Alumina Refinery and Aluminium Smelter Plant is submitted regularly to Ministry's Regional Office at Bhopal/Nagpur. Last report was submitted vide our letter no. BALCO/ENV/A-02(A)/2025/493 dated 16th October 2025. Copy of the letter attached as Annexure - IX.</p>

xvii	The company shall comply with all the commitments made during public hearing/public consultation held on 16th November 2007. The company shall prepare the action plan for implementation of the commitments and same shall be submitted to the Ministry and its Regional Office at Bhopal and Chhattisgarh Environmental Conservation Board Raipur.	The commitments made during the public hearing are being implemented and the status of the same is attached as Annexure- X .
xviii	Prior permission from the State Forest Department shall be obtained due to the likely impact of transport of raw material and end product and gaseous emissions from the smelter on the surrounding reserve forests and wildlife. Recommendations regarding mitigative measures suggested by the State Forest department and Chief Wildlife Warden, Govt. of Chhattisgarh shall be strictly followed.	BALCO has the required transport infrastructure (Rail & Road) in place. A letter has been sent to the Principal Chief Conservator of Forest on 18.11.2015 vide Letter No. Balco / Sm3.25LTPA / Env / 01(A) / 2015 / 380 and is being followed up regularly. Further, the impact due to transportation and operations was evaluated in the EIA for expansion project and the Wildlife Conservation/ Management Plan was prepared. This has been discussed during the EC Appraisal process.
xix	Ministry of Environment and Forests shall regularly be informed about the source and quantity of Alumina procured from captive/indigenous/imported sources.	The source and quantity of Alumina procurement from October 2025 to March 2026 is as follows: <ol style="list-style-type: none"> 1. Indigenous –214067 (Vedanta Limited, Lanjigarh, Odisha) 2. Indigenous –65570 MT (Utkal Alumina, Odisha, Muri Alumina - Jharkhand) 3. Imported – 345039 MT (Ras-Al-Kher, Saudi Arabia, Go Dau, Vietnam, Kendawangan, Indonesia, Kijang, Indonesia, Gladstone, Australia)
xx	Alumina shall be obtained only from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.	Complied with. Alumina procured from the sister concern (Vedanta Limited, (Lanjigarh) has the required EC from MoEF&CC (No. J-11011/81/2003-IA-II dated 22.09.2004, No. J-11011/53/2014-IA.II dated 20.11.2015, No. J-11011/406/2011-IA.II(I) dated 06.08.2021).

B. General Condition

i	The Project authorities must strictly adhere to the stipulation made by the Chhattisgarh Environment Conservation Board and the State Government.	Complied with.
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ii	No expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Complied with.
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 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.	AAQ stations have been set up both in upwind and downwind directions at locations approved by the State Pollution Control Board. Copy of monthly stack emission monitoring reports attached as Annexure – I. Copy of monthly fugitive emission monitoring reports attached as Annexure –II. Copy of monthly ambient air quality monitoring reports attached as Annexure – XI.
iv	Industrial wastewater should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended form time to time. The treated wastewater should be recycled in the plant as well as utilization for plantation purposes.	Effluent Treatment Plant with RO system is in place and treated effluent from ETP is being used in the plant activities.
v	The project authorities shall with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules 2003. Authorization from the CECB must be obtained for collection, storage, treatment and disposal of hazardous wastes.	Authorization in accordance with Hazardous and other Waste (Management, and Transboundary Movement) Rules 2016 has already been obtained from CECB vide letter No. 5255/HSMD/HO/CECB/2021 Raipur dated 22.10.2021, which was further amended vide letter No. 5394/HSMD/HO/CECB/2025 Nava Raipur Atal Nagar, Dated 07/08/2025 and 13438/HSMD/HO/CECB/2026 Nava Raipur Atal Nagar, Dated 11/03/2026 for generation, collection, storage, transport, reuse, recycling and disposal of hazardous wastes and the same is valid up to 23.10.2026. Copy of Authorization and its amendment attached as Annexure -XII.
vi	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measured 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 (Night time)	Equipment designed to ensure that noise level at plant boundary area is within the stipulated level of 85 dB. Copy of noise monitoring reports attached as Annexure – XIII.
vii	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP/risk analysis and DMP report.	Complied with.

viii	As proposed in EIA/EMP Rs. 216.50 Crores earmarked toward the capital cost and recurring the expenditure/annum for environmental protection measures shall be used judiciously to implement the condition stipulated by the Ministry of Environment and Forests as well as the state Government. The funds so provided shall not be diverted for any other purposes.	Complied with.
ix	The Regional Office of this Ministry at Bhopal/Central pollution Control Board/CECB will monitor stipulated conditions. A six-monthly compliance report and the monitored data along with Statistical interpretation should be submitted to them regularly.	Complied with. EC Compliance was last submitted vide letter no BALCO/ENV/A-02(A)/2025/493 dated 16 th October 2025. Copy of the letter attached as Annexure – IX .
x	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. Copy of newspaper advertisements attached as Annexure–XIV .
xi	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 of Aluminium smelter from 3.25 LTPA to 9.0 LTPA was approved by MoEFCC vide EC letter No. J-11011/123/2007-IA-II (I) MoEF dated 16.09.2008 and Consent to Establish vide letter No. 4567/TS/CECB/2022 dated 12.11.2010. We have commenced the land development work as per the Consent to Establish and final approval i.e. Consent to Operate vide letter No. 3747/TS/CECB/2013 dated 25.10.2013.
6.0	The Ministry may; revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted.
7.0	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in at time bound manner will implement these conditions	Noted.

8.0	Any appeal against this environment clearance shall lie with the national environment appellate authority, if preferred within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.	Noted.
9.0	The above conditions will be enforced, 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.

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657

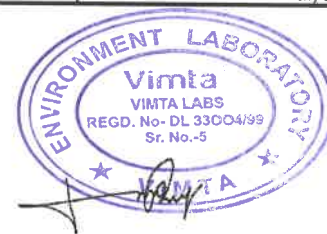


ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No.:	VLL/VLS/25-26/15704/PL-2	
					Issue Date:	2025-11-05	
					P.O No:	8500005780	
					P.O Date:	2022-06-29	
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2							
Analysis starting date :- 2025-10-14			Analysis Completion date :- 2025-10-22				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ ;							
TEST RESULTS							
POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits	Units	2025-10-13	2025-10-21	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	108	107	-
5		Stack Pressure	-	mmHg	732	731	-
6		Velocity	-	m/s	9.9	9.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1418454	1405898	
8		Particulate Matter (PM)	30	mg/Nm ³	4.60	2.86	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.095	0.079	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.264	0.241	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	92	132	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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No:	VLL/VLS/25-26/15704/GAP-2
	Issue Date:	2025-11-05
	P.O No:	8500005780
	P.O Date:	2022-06-29

Sample Particular:- STACK EMISSION MONITORING AT GAP - 2

Analysis starting date :- 2025-10-31

Analysis Completion date :- 2025-11-05

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO₂, NO_x, HC, VOC and PAH;**TEST RESULTS**

S No.	Location	Parameter	Limits	Units	GAP - 2	GAP - 2	GAP - 2	GAP - 2	Method
					D 6	D 7	D 8	D 9	
					2025-10-30	2025-10-30	2025-10-30	2025-10-30	
1	GAP - 2	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	58	55	45	52	-
5		Stack Pressure	-	mmHg	728	729	729	728	-
6		Velocity	-	m/s	8.8	8.2	7.4	7.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	69558	2624	2443	62792	
8		Particulate Matter (PM)	30	mg/Nm ³	13.6	8.2	6.7	10.4	USEPA M-5
10		Gaseous Fluoride	-	mg/Nm ³	0.051	0.072	0.042	0.059	USEPA M-13B
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	2.9	37.2	8.6	8.6	Measured by Portable Combustion Analyser
12		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	2.1	ND	ND	
13		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
14		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
15		PAH	2	mg/Nm ³	0.013	0.016	0.011	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 Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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					Issue Date:	2025-11-05	
					P.O No:	8500005780	
					P.O Date:	2022-06-29	
Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT							
Analysis starting date :- 2025-10-30				Analysis Completion date :- 2025-11-05			
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;							
TEST RESULTS							
BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Method
S No.	Location	Parameter	Limits	Units	2025-10-29	2025-10-29	
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	-
2		Diameter	-	m	1.2	1.9	-
3		Area of Cross section	-	m ²	1.131	2.836	-
4		Stack Temperature	-	°C	92	83	-
5		Stack Pressure	-	mmHg	728	729	-
6		Velocity	-	m/s	16.2	8.4	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	51585	68860	
8		Particulate Matter (PM)	30	mg/Nm ³	9.5	8.5	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.089	0.112	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.367	0.395	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	286.0	237.4	Measured by Portable Combustion Analyser
12		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	47.2	51.3	
13		Hydrocarbon as HC	-	PPM	ND	ND	
14		VOC	-	mg/Nm ³	<0.001	<0.001	USEPA M-30/31
15		PAH	2	mg/Nm ³	0.017	0.014	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 Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No.:	VLL/VLS/25-26/18084/PL-2	
					Issue Date:	2025-12-05	
					P.O No:	3402001553	
					P.O Date:	2025-10-01	
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2							
Analysis starting date :- 2025-11-13			Analysis Completion date :- 2025-11-17				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ ;							
TEST RESULTS							
POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits	Units	2025-11-13	2025-11-12	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	106	108	-
5		Stack Pressure	-	mmHg	732	734	-
6		Velocity	-	m/s	10.2	10.4	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1469150	1494165	
8		Particulate Matter (PM)	30	mg/Nm ³	4.02	2.60	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.103	0.074	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.381	0.262	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	120	123	Measured by Portable Combustion Analyser

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/18084/GAP-2			
					Issue Date:	2025-12-05			
					P.O No:	3402001553			
					P.O Date:	2025-10-01			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 2									
Analysis starting date :- 2025-11-20					Analysis Completion date :- 2025-12-04				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO ₂ , NO _x , HC, VOC and PAH;									
TEST RESULTS									
GAP - 2					GAP - 2 D 6	GAP - 2 D 7	GAP - 2 D 8	GAP - 2 D 9	Method
S No.	Location	Parameter	Limits	Units	2025-11-19	2025-11-19	2025-11-19	2025-11-19	
1	GAP - 2	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	60	52	40	55	-
5		Stack Pressure	-	mmHg	735	735	734	734	-
6		Velocity	-	m/s	8.7	7.4	9.4	7.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	69012	2410	3174	61926	
8		Particulate Matter (PM)	30	mg/Nm ³	11.7	8.4	10.2	13.2	USEPA M-5
10		Gaseous Fluoride	-	mg/Nm ³	0.045	0.068	0.052	0.061	USEPA M-13B
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	8.6	40.0	11.4	14.3	Measured by Portable Combustion Analyser
12		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	ND	2.1	2.1	2.1	
13		Hydrocarbon as HC	-	PPM	ND	ND	ND	ND	
14		VOC	-	mg/Nm ³	<0.001	<0.001	<0.001	<0.001	USEPA M-30/31
15		PAH	2	mg/Nm ³	0.016	0.017	0.015	0.013	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



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657

ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No:	VLL/VLS/25-26/18084/BO
	Issue Date:	2025-12-05
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT

Analysis starting date :- 2025-11-18

Analysis Completion date :- 2025-12-05

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, SO₂, NO_x, HC, VOC and PAH;**TEST RESULTS**

BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Method
S No.	Location	Parameter	Limits	Units	2025-11-17	2025-11-28	
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	-
2		Diameter	-	m	1.2	1.9	-
3		Area of Cross section	-	m ²	1.131	2.836	-
4		Stack Temperature	-	°C	89	82	-
5		Stack Pressure	-	mmHg	736	736	-
6		Velocity	-	m/s	16.0	8.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	51935	73037	
8		Particulate Matter (PM)	30	mg/Nm ³	7.1	5.9	USEPA M-5
9		Particulate Fluoride	-	mg/Nm ³	0.094	0.104	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.399	0.342	
11		Sulphur Dioxide as SO ₂	-	mg/Nm ³	351.8	231.7	Measured by Portable Combustion Analyser
12		Oxides of Nitrogen NO _x as NO ₂	-	mg/Nm ³	39.0	47.2	
13		Hydrocarbon as HC	-	PPM	ND	ND	
14		VOC	-	mg/Nm ³	<0.001	<0.001	USEPA M-30/31
15		PAH	2	mg/Nm ³	0.014	0.016	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 Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No.:	VLL/VLS/25-26/20775/PL-2
	Issue Date:	2026-01-05
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2

Analysis starting date :- 2025-12-12

Analysis Completion date :- 2025-12-17

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, Total Fluoride;

TEST RESULTS

POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits (Max)	Units	2025-12-11	2025-12-15	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	108	109	-
5		Stack Pressure	-	mmHg	735	736	-
6		Velocity	-	m/s	9.9	9.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1424267	1422472	
8		Particulate Matter (PM)	30	mg/Nm ³	3.83	2.52	USEPA M-5
9		Particulate Fluoride	0.65	mg/Nm ³	0.079	0.072	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.260	0.286	
11		Total Fluoride as F	0.8	kg/ton of Al	0.026	0.028	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTO No. 7398/TS/CECB/2025



Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No:	VLL/VLS/25-26/20775/GAP-2
	Issue Date:	2026-01-05
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT GAP - 2

Analysis starting date :- 2025-12-31

Analysis Completion date :- 2026-01-05

Test Required :- PM;

TEST RESULTS

S No.	Location	Parameter	Limits (Max)	Units	GAP - 2	GAP - 2	GAP - 2	GAP - 2	Method	
					D 6	D 7	D 8	D 9		
					2025-12-30	2025-12-30	2025-12-30	2025-12-30		
1	GAP - 2	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	55	44	57	-	
5		Stack Pressure	-	mmHg	734	734	734	734	-	
6		Velocity	-	m/s	8.6	7.6	7.7	9.1	USEPA M-2	
7		Volumetric Flow Rate	-	Nm ³ /Hr	71340	2449	2567	72742		
8		Particulate Matter (PM)	30	mg/Nm ³	11.7	15.2	15.0	13.5	USEPA M-5	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM limit as per the CTO No. 7397/TS/CECB/2025



Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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					Issue Date:	2026-01-05	
					P.O No:	3402001553	
					P.O Date:	2025-10-01	
Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT							
Analysis starting date :- 2025-12-26				Analysis Completion date :- 2026-01-05			
Test Required :- PM, TF, SO₂, PAH;							
TEST RESULTS							
BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Method
S No.	Location	Parameter	Limits (Max)	Units	2025-12-29	2025-12-24	
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	-
2		Diameter	-	m	1.2	1.9	-
3		Area of Cross section	-	m ²	1.131	2.836	-
4		Stack Temperature	-	°C	75	82	-
5		Stack Pressure	-	mmHg	738	732	-
6		Velocity	-	m/s	16.2	8.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	54848	73466	
8		Particulate Matter (PM)	30	mg/Nm ³	20.1	10.1	USEPA M-5
9		Total Fluoride as F	0.3	kg/ton of Al	0.007	0.005	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	331.8	217.4	Measured by Portable Combustion Analyser
11		PAH	2	mg/Nm ³	0.016	0.015	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTE No. 7398/TS/CECB/2025



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No.:	VLL/VLS/25-26/23223/PL-2	
					Issue Date:	2026-02-05	
					P.O No:	3402001553	
					P.O Date:	2025-10-01	
Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2							
Analysis starting date :- 2026-01-08			Analysis Completion date :- 2026-01-17				
Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, Total Fluoride;							
TEST RESULTS							
POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-01-07	2026-01-15	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	109	104	-
5		Stack Pressure	-	mmHg	737	735	-
6		Velocity	-	m/s	9.6	9.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1381241	1439379	
8		Particulate Matter (PM)	30	mg/Nm ³	3.07	3.45	USEPA M-5
9		Particulate Fluoride	0.65	mg/Nm ³	0.069	0.054	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.284	0.276	
11		Total Fluoride as F	0.8	kg/ton of Al	0.022	0.021	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTO No. 7398/TS/CECB/2025



Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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					Issue Date:	2026-02-05			
					P.O No:	3402001553			
					P.O Date:	2025-10-01			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 2									
Analysis starting date :- 2026-01-21					Analysis Completion date :- 2026-01-21				
Test Required :- PM;									
TEST RESULTS									
GAP - 2					GAP - 2 D 6	GAP - 2 D 7	GAP - 2 D 8	GAP - 2 D 9	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-01-20	2026-01-20	2026-01-20	2026-01-20	
1	GAP - 2	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	43	52	40	59	-
5		Stack Pressure	-	mmHg	735	735	735	734	-
6		Velocity	-	m/s	8.6	6.6	8.0	13.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	71889	2149	2705	110443	
8		Particulate Matter (PM)	30	mg/Nm ³	7.2	9.3	6.6	8.9	USEPA M-5

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down

*PM limit as per the CTO No. 7397/TS/CECB/2025



Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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					Issue Date:	2026-02-05		
					P.O No:	3402001553		
					P.O Date:	2025-10-01		
Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT								
Analysis starting date :- 2026-01-17				Analysis Completion date :- 2026-01-28				
Test Required :- PM, TF, SO₂, PAH;								
TEST RESULTS								
BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Method	
S No.	Location	Parameter	Limits (Max)	Units	2026-01-16	2026-01-16		
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	-	
2		Diameter	-	m	1.2	1.9	-	
3		Area of Cross section	-	m ²	1.131	2.836	-	
4		Stack Temperature	-	°C	97	81	-	
5		Stack Pressure	-	mmHg	736	734	-	
6		Velocity	-	m/s	15.2	9.1	USEPA M-2	
7		Volumetric Flow Rate	-	Nm ³ /Hr	48271	75535		
8		Particulate Matter (PM)	30	mg/Nm ³	9.4	8.3	USEPA M-5	
9		Total Fluoride as F	0.3	kg/ton of Al	0.001	0.002	USEPA M-13B	
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	246.0	177.3	Measured by Portable Combustion Analyser	
11		PAH	2	mg/Nm ³	0.014	0.012	CARB 429	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTE No. 7398/TS/CECB/2025



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No.:	VLL/VLS/25-26/24935/PL-2
	Issue Date:	2026-03-05
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2

Analysis starting date :- 2026-02-28

Analysis Completion date :- 2026-03-02

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, Total Fluoride;

TEST RESULTS

POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-02-27	2026-02-27	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	105	108	-
5		Stack Pressure	-	mmHg	730	728	-
6		Velocity	-	m/s	9.7	10.5	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1397001	1496200	
8		Particulate Matter (PM)	30	mg/Nm ³	4.54	3.73	USEPA M-5
9		Particulate Fluoride	0.65	mg/Nm ³	0.062	0.063	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.289	0.291	
11		Total Fluoride as F	0.8	kg/ton of Al	0.021	0.023	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTO No. 7398/TS/CECB/2025

Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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					Issue Date:	2026-03-05			
					P.O No:	3402001553			
					P.O Date:	2025-10-01			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 2									
Analysis starting date :- 2026-02-24					Analysis Completion date :- 2026-02-24				
Test Required :- PM;									
TEST RESULTS									
GAP - 2					GAP - 2 D 6	GAP - 2 D 7	GAP - 2 D 8	GAP - 2 D 9	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-02-23	2026-02-23	2026-02-23	2026-02-23	
1	GAP - 2	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	50	58	45	58	-
5		Stack Pressure	-	mmHg	732	732	732	732	-
6		Velocity	-	m/s	7.9	7.8	7.6	9.7	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	64343	2484	2519	77094	
8		Particulate Matter (PM)	30	mg/Nm ³	6.4	5.9	5.0	7.6	USEPA M-5

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down

*PM limit as per the CTO No. 7397/TS/CECB/2025


Dr. Subba Reddy Mallampati
 Manager - Environment


Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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	Issue Date:	2026-03-05
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT

Analysis starting date :- 2026-02-12

Analysis Completion date :- 2026-02-24

Test Required :- PM, TF, SO₂, PAH;

TEST RESULTS

BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Bake Oven FTP - 3	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-02-11	2026-02-11	2026-02-18	
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	55	-
2		Diameter	-	m	1.2	1.9	3.2	-
3		Area of Cross section	-	m ²	1.131	2.836	8.05	-
4		Stack Temperature	-	°C	96	91	57	-
5		Stack Pressure	-	mmHg	733	733	733	-
6		Velocity	-	m/s	16.0	9.0	5.5	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	50742	72553	138821	
8		Particulate Matter (PM)	30	mg/Nm ³	9.7	7.1	14.5	USEPA M-5
9		Total Fluoride as F	0.3	kg/ton of Al	0.004	0.003	0.033	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	240.2	254.5	194.5	Measured by Portable Combustion Analyser
11		PAH	2	mg/Nm ³	0.018	0.016	0.012	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down

*PM & TF limit as per the CTE No. 7398/TS/CECB/2025



Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)	Report No.:	VLL/VLS/25-26/28724/PL-2
	Issue Date:	2026-04-04
	P.O No:	3402001553
	P.O Date:	2025-10-01

Sample Particular:- STACK EMISSION MONITORING AT POTLINE - 2

Analysis starting date :- 2026-03-17

Analysis Completion date :- 2026-03-19

Test Required :- PM, Particulate Fluoride, Gaseous Fluoride, Total Fluoride;

TEST RESULTS

POTLINE - 2					POTLINE - 2 FTP - 1	POTLINE - 2 FTP - 2	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-03-16	2026-03-16	
1	POTLINE - 2	Height of the stack	-	m	80	80	-
2		Diameter	-	m	8.2	8.2	-
3		Area of Cross section	-	m ²	52.831	52.831	-
4		Stack Temperature	-	°C	112	114	-
5		Stack Pressure	-	mmHg	730	728	-
6		Velocity	-	m/s	9.5	9.8	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	1343321	1374803	
8		Particulate Matter (PM)	30	mg/Nm ³	3.92	4.59	USEPA M-5
9		Particulate Fluoride	0.65	mg/Nm ³	0.078	0.090	USEPA M-13B
10		Gaseous Fluoride	-	mg/Nm ³	0.332	0.362	
11		Total Fluoride as F	0.8	kg/ton of Al	0.024	0.027	

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND - Not Deducted

*USD - Unit Under Shut Down

*PM & TF limit as per the CTO No. 7398/TS/CECB/2025



Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/28724/GAP-2			
					Issue Date:	2026-04-04			
					P.O No:	3402001553			
					P.O Date:	2025-10-01			
Sample Particular:- STACK EMISSION MONITORING AT GAP - 2									
Analysis starting date :- 2026-03-14					Analysis Completion date :- 2026-03-14				
Test Required :- PM;									
TEST RESULTS									
GAP - 2					GAP - 2 D 6	GAP - 2 D 7	GAP - 2 D 8	GAP - 2 D 9	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-03-13	2026-03-13	2026-03-13	2026-03-13	
1	GAP - 2	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	58	64	52	61	-
5		Stack Pressure	-	mmHg	730	730	730	729	-
6		Velocity	-	m/s	8.3	7.9	8.1	7.9	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	65786	2464	2620	61969	
8		Particulate Matter (PM)	30	mg/Nm ³	7.9	9.1	7.4	8.3	USEPA M-5

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down

*PM limit as per the CTO No. 7397/TS/CECB/2025



Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited KORBA (C.G.)					Report No:	VLL/VLS/25-26/28724/BO		
					Issue Date:	2026-04-04		
					P.O No:	3402001553		
					P.O Date:	2025-10-01		
Sample Particular:- STACK EMISSION MONITORING AT BAKE OVEN PLANT								
Analysis starting date :- 2026-03-07					Analysis Completion date :- 2026-03-21			
Test Required :- PM, TF, SO ₂ , PAH;								
TEST RESULTS								
BAKE OVEN PLANT					Bake Oven FTP - 1	Bake Oven FTP - 2	Bake Oven FTP - 3	Method
S No.	Location	Parameter	Limits (Max)	Units	2026-03-14	2026-03-19	2026-03-06	
1	BAKE OVEN PLANT	Height of the stack	-	m	55	55	55	-
2		Diameter	-	m	1.2	1.9	3.2	-
3		Area of Cross section	-	m ²	1.131	2.836	8.05	-
4		Stack Temperature	-	°C	97	82	54	-
5		Stack Pressure	-	mmHg	729	731	731	-
6		Velocity	-	m/s	15.0	8.7	6.1	USEPA M-2
7		Volumetric Flow Rate	-	Nm ³ /Hr	47183	71717	154953	
8		Particulate Matter (PM)	30	mg/Nm ³	9.8	5.1	12.0	USEPA M-5
9		Total Fluoride as F	0.3	kg/ton of Al	0.006	0.004	0.032	USEPA M-13B
10		Sulphur Dioxide as SO ₂	-	mg/Nm ³	263.1	194.5	237.5	Measured by Portable Combustion Analyser
11		PAH	2	mg/Nm ³	0.014	0.016	0.013	CARB 429

*Instrument Used - Vayubodhan Stack Sampler Kit

*ND – Not Deducted

*USD – Unit Under Shut Down

*PM & TF limit as per the CTE No. 7398/TS/CECB/2025



Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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			Issue Date:	2025-11-05			
			P.O.No:	8500005780			
			P.O. Date:	2022-06-29			
FUGITIVE EMISSION MONITORING AT POT LINE - 2							
Registration Date:		2025-10-17		Sampling Date:		2025-10-16	
Analysis starting date :		2025-10-17		Analysis Completion date:		2025-10-18	
Test Required :- PM, Fluoride;							
TEST RESULTS							
S. No.	Parameter	Units	POT LINE -2				
			Section 1	Section 2	Section 7	Section 8	
			2025-10-16	2025-10-17	2025-10-17	2025-10-16	
1	PM	$\mu\text{g}/\text{m}^3$	493	447	489	492	
2	Fluoride	$\mu\text{g}/\text{m}^3$	391	364	322	378	

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



Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)				Report No.:	VLL/VLS/25-26/20775/PL-F		
				Issue Date:	2026-01-05		
				P.O.No:	3402001553		
				P.O. Date:	2025-10-01		
FUGITIVE EMISSION MONITORING AT POT LINE - 2							
Registration Date:		2025-12-10		Sampling Date:		2025-12-09	
Analysis starting date :		2025-12-10		Analysis Completion date:		2025-12-22	
Test Required :- PM, Fluoride;							
TEST RESULTS							
S. No.	Parameter	Units	Limits (Max)	POT LINE -2			
				Section 1	Section 2	Section 7	Section 8
				2025-12-09	2025-12-20	2025-12-20	2025-12-09
1	Particulate Fluoride	mg/Nm ³	1.85	0.197	0.186	0.187	0.179

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


Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/23223/PL-F
	Issue Date:	2026-02-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

FUGITIVE EMISSION MONITORING AT POT LINE - 2

Registration Date:	2026-01-20	Sampling Date:	2026-01-19
Analysis starting date :	2026-01-20	Analysis Completion date:	2026-01-21

Test Required :- PM, Fluoride;

TEST RESULTS

S. No.	Parameter	Units	Limits (Max)	POT LINE -2			
				Section 1	Section 2	Section 7	Section 8
				2026-01-19	2026-01-20	2026-01-20	2026-01-19
1	Particulate Fluoride	mg/Nm ³	1.85	0.174	0.192	0.159	0.186

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



Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/24935/PL-F
	Issue Date:	2026-03-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

FUGITIVE EMISSION MONITORING AT POT LINE - 2

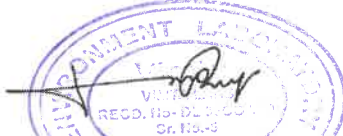
Registration Date: 2026-02-23 Sampling Date: 2026-02-23
Analysis starting date : 2026-02-23 Analysis Completion date: 2026-02-25

Test Required :- PM, Fluoride;

TEST RESULTS

S. No.	Parameter	Units	Limits (Max)	POT LINE -2			
				Section 1	Section 2	Section 7	Section 8
				2026-02-23	2026-02-24	2026-02-24	2026-02-23
1	Particulate Fluoride	mg/Nm ³	1.85	0.052	0.053	0.053	0.056

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

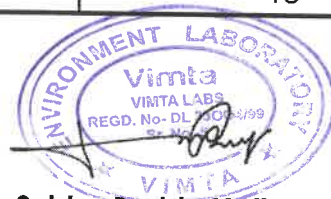

Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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F : +91 40 2726 3657



ISSUED TO:		Report No.:	VLL/VLS/25-26/15704/Forage	
M/s. Bharat Aluminium Company Limited, KORBA (C.G.)		Issue Date:	2025-11-05	
		P.O.No:	8500005780	
		P.O. Date:	2022-06-29	
FORAGE FLUORIDE				
Registration Date: 2025-10-07		Sampling Date: 2025-10-04		
Analysis starting date: 2025-10-07		Analysis Completion date: 2025-10-10		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	39
2	Near Parsabhata	PPM	80	16
3	Near Lal ghat	PPM	80	23
4	Near check post	PPM	80	18
5	Near Sharma petrol pump	PPM	80	25
6	Bhadrapara	PPM	80	19
7	Risdi	PPM	80	16
8	Rampur	PPM	80	9
9	Manikpur	PPM	80	12
10	jambahar	PPM	80	11
11	Rumgarha	PPM	80	18
12	Gerwan	PPM	80	13



Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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	Issue Date:	2025-12-05		
	P.O.No:	3402001553		
	P.O. Date:	2025-10-01		
FORAGE FLUORIDE				
Registration Date: 2025-11-10		Sampling Date: 2025-11-04		
Analysis starting date: 2025-11-10		Analysis Completion date: 2025-11-14		
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	18
3	Near Lal ghat	PPM	80	27
4	Near check post	PPM	80	23
5	Near Sharma petrol pump	PPM	80	26
6	Bhadrapara	PPM	80	17
7	Risdi	PPM	80	18
8	Rampur	PPM	80	10
9	Manikpur	PPM	80	15
10	jambahar	PPM	80	12
11	Rumgarha	PPM	80	16
12	Gerwan	PPM	80	14


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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/20775/Forage
	Issue Date:	2026-01-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

FORAGE FLUORIDE

Registration Date: 2025-12-08 Sampling Date: 2025-12-02
Analysis starting date: 2025-12-08 Analysis Completion date: 2025-12-16

Test Required :- Fluoride;

TEST RESULTS

S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	35
2	Near Parsabhata	PPM	80	20
3	Near Lal ghat	PPM	80	27
4	Near check post	PPM	80	23
5	Near Sharma petrol pump	PPM	80	22
6	Bhadrapara	PPM	80	19
7	Risdi	PPM	80	17
8	Rampur	PPM	80	12
9	Manikpur	PPM	80	9
10	jambahar	PPM	80	14
11	Rumgarha	PPM	80	13
12	Gerwan	PPM	80	10


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Manager - Environment

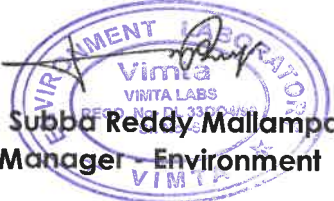
Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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	Issue Date:	2026-02-05		
	P.O.No:	3402001553		
	P.O. Date:	2025-10-01		
FORAGE FLUORIDE				
Registration Date: 2026-01-15		Sampling Date: 2026-01-13		
Analysis starting date: 2026-01-15		Analysis Completion date: 2026-01-20		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	37
2	Near Parsabhata	PPM	80	19
3	Near Lal ghat	PPM	80	24
4	Near check post	PPM	80	25
5	Near Sharma petrol pump	PPM	80	20
6	Bhadrapara	PPM	80	16
7	Risdi	PPM	80	14
8	Rampur	PPM	80	13
9	Manikpur	PPM	80	10
10	jambahar	PPM	80	11
11	Rumgarha	PPM	80	12
12	Gerwan	PPM	80	9


Dr. Subba Reddy Mallampati
Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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	Issue Date:	2026-04-04
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

FORAGE FLUORIDE

Registration Date: 2026-03-09 Sampling Date: 2026-03-06
Analysis starting date: 2026-03-09 Analysis Completion date: 2026-03-17

Test Required :- Fluoride;

TEST RESULTS

S. No.	Location	Unif	Norms	Results
1	In Side of the plant	PPM	80	38
2	Near Parsabhata	PPM	80	17
3	Near Lal ghat	PPM	80	24
4	Near check post	PPM	80	18
5	Near Sharma petrol pump	PPM	80	14
6	Bhadrapara	PPM	80	20
7	Risdi	PPM	80	10
8	Rampur	PPM	80	12
9	Manikpur	PPM	80	14
10	jambahar	PPM	80	13
11	Rumgarha	PPM	80	11
12	Gerwan	PPM	80	8


Dr. Subba Reddy Mallampati
Manager - Environment


Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657

**ISSUED TO:**

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

**Report Number : VLL/VLS/25-26/15704/001
Issued Date : 2025-11-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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)	6.91	6.96	6.82	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	3	2	4
6	Total dissolved solids at 180°C	mg/l	500(2000)	172	205	310	269
7	Total Hardness as CaCO ₃	mg/l	200(600)	115	134	203	190
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	50	55	110	90
9	Calcium as Ca	mg/l	75(200)	30.0	37.6	61.0	58.4
10	Magnesium as Mg	mg/l	30(100)	9.8	9.7	12.3	10.5
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)	0.034	0.026	0.018	0.029
13	Chlorides as Cl	mg/l	250(1000)	40.0	51.2	69.3	72.2
14	Sulphate as SO ₄	mg/l	200(400)	29.1	34.2	34.8	22.3
15	Fluorides as F	mg/l	1.0(1.5)	0.192	0.137	0.319	0.274
16	Nitrates as NO ₃	mg/l	45(NR)	1.6	2.7	1.5	1.2
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/25-26/15704/001
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P.O. Date : 2022-06-29

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

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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	0.014	0.008	0.016
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)	0.043	0.028	0.052	0.031
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)	0.016	0.024	0.015	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)	0.012	0.023	0.013	0.022
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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**Report Number : VLL/VLS/25-26/15704/001
Issued Date : 2025-11-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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)**

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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

**Report Number : VLL/VLS/25-26/15704/001
 Issued Date : 2025-11-05
 P.O. No. : 8500005780
 P.O. Date : 2022-06-29**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
 Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
 Test Required : Water Analysis as per IS 10500 : 2012
 SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

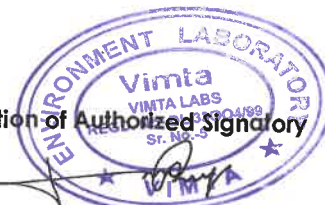
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
59	Malathion	µg/l	190	BDL	BDL	BDL	BDL
60	Methyl parathion	µg/l	0.3	BDL	BDL	BDL	BDL
61	Monocrotophos	µg/l	1	BDL	BDL	BDL	BDL
62	Phorate	µg/l	2	BDL	BDL	BDL	BDL
63	E.coli	Per 100 ml	Absent	Absent	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
 (Manager - Environment)**



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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)	7.19	6.85	6.87	7.05
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	2	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	279	201	250	230
7	Total Hardness as CaCO ₃	mg/l	200(600)	186	138	166	150
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	85	75	80	70
9	Calcium as Ca	mg/l	75(200)	55.2	40.0	48.5	45
10	Magnesium as Mg	mg/l	30(100)	11.6	9.2	10.8	9.1
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)	0.036	0.014	0.043	0.037
13	Chlorides as Cl	mg/l	250(1000)	79.4	44.0	61.7	63.5
14	Sulphate as SO ₄	mg/l	200(400)	25.4	23.5	29.5	23.5
15	Fluorides as F	mg/l	1.0(1.5)	0.359	0.256	0.174	0.118
16	Nitrates as NO ₃	mg/l	45(NR)	2.6	1.3	2.1	1.3
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



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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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	0.024	0.037	0.009
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)	0.024	0.036	0.041	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)	0.022	0.015	0.028	0.013
32	Aluminum as Al	mg/l	0.03(0.2)	0.017	0.025	0.014	0.008
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)	0.008	0.011	0.017	0.019
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
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	Bromoforn	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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

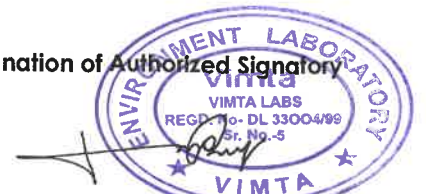
Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-29
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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

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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-24
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.

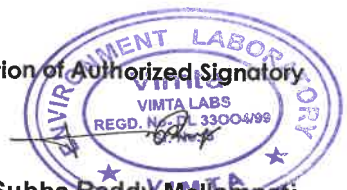
TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.24	7.09	7.17	7.21
2	Colour	Hazen	1	3	1	3
3	Conductivity	µS/cm	125	174	145	193
4	TDS	mg/l	79	110	90	119
5	DO	mg/l	6.8	5.2	5.4	5.6
6	BOD	mg/l	0.7	1.9	0.8	2.2
7	COD	mg/l	2.4	7.2	3.2	9.6
8	Turbidity	NTU	7.0	13.0	15.0	11.0
9	Total Hardness as CaCO ₃	mg/l	36	56	50	68
10	Total Alkalinity as CaCO ₃	mg/l	30	40	35	42
11	Calcium as Ca	mg/l	8.5	15.6	11	16
12	Magnesium as Mg	mg/l	3.5	4.1	5.5	6.7
13	Chlorides as Cl	mg/l	19.4	21.8	22.6	28.5
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	<0.01	0.03	0.02	0.04
16	Sulphates as SO ₄	mg/l	4.5	11	3.8	9.7
17	Fluorides as F	mg/l	0.094	0.172	0.153	0.116
18	Nitrates as NO ₃	mg/l	0.5	0.9	0.6	1.1
19	Sodium as Na	mg/l	12.3	14	9.7	13
20	Potassium as K	mg/l	0.3	0.8	0.4	0.4
21	Total Boron as B	mg/l	0.007	0.024	0.012	0.054
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	0.020	0.078	0.052	0.038
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	0.024	0.160	0.074	0.043
33	Aluminum as Al	mg/l	0.014	0.019	0.022	0.023
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.90	0.82	0.60	0.69
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	210	220	180	290

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
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Page 1 of 1

SAMPLE PARTICULARS : **SURFACE WATER SAMPLE (BALCO PLANT)**
Sample Registration Date : 2025-10-11 Sampling Date : 2025-10-04
Analysis Starting Date : 2025-10-11 Analysis Completion Date : 2025-10-24
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	-	7.37	7.41	7.36	7.21	7.23
2	Colour	Hazen	1	2	2	3	2
3	Conductivity	µS/cm	148	160	152	174	168
4	TDS	mg/l	81	100	94	105	112
5	DO	mg/l	7.7	7.9	7.4	7.1	7.3
6	BOD	mg/l	1.6	1.5	1.7	2.3	2.2
7	COD	mg/l	5.6	8.0	7.2	8.8	8.0
8	Turbidity	NTU	7.0	9.0	6.0	12.0	10.0
9	Total Hardness as CaCO ₃	mg/l	38	50	49	54	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	4.5	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	0.02	0.04	0.01	0.03	0.02
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	0.518	0.473	0.494	0.517
18	Nitrates as NO ₃	mg/l	0.9	1.1	1.2	0.6	0.7
19	Sodium as Na	mg/l	15.8	13.8	12.7	14.3	11.6
20	Potassium as K	mg/l	1.6	0.9	1.2	1.1	1.4
21	Total Boron as B	mg/l	<0.01	0.013	0.037	0.019	0.015
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	0.017	0.032	0.028	0.034	0.017
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	0.150	0.097	0.058	0.073
33	Aluminum as Al	mg/l	0.014	0.028	0.026	0.019	0.027
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.11	0.86	0.79	0.84	0.67
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	220	580	370	490	610

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

**Report Number : VLL/VLS/25-26/18084/001
Issued Date : 2025-12-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

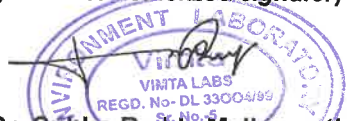
Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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	7.18	6.95	7.26
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)	2.3	1.2	1.6	1.9
6	Total dissolved solids at 180°C	mg/l	500(2000)	326	255	445	360
7	Total Hardness as CaCO ₃	mg/l	200(600)	161	155	233	206
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	120	90	165	130
9	Calcium as Ca	mg/l	75(200)	35.6	42.6	58.0	52.5
10	Magnesium as Mg	mg/l	30(100)	17.4	11.8	21.4	18.2
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)	0.05	0.03	0.05	0.04
13	Chlorides as Cl	mg/l	250(1000)	67.8	55.4	97.5	85.3
14	Sulphate as SO ₄	mg/l	200(400)	37.2	29.8	44	28.5
15	Fluorides as F	mg/l	1.0(1.5)	0.192	0.137	0.319	0.874
16	Nitrates as NO ₃	mg/l	45(NR)	2.8	3.2	4.1	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	mg/l	0.05(NR)	<0.02	<0.02	<0.02	<0.02

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	: 2025-11-10	Sampling Date	: 2025-11-03
Analysis Starting Date	: 2025-11-10	Analysis Completion Date	: 2025-11-26
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)	0.02	<0.01	0.02	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)	0.02	<0.01	0.01	0.01
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)	<0.01	<0.01	<0.01	<0.01
28	Iron as Fe	mg/l	0.3(NR)	0.07	0.04	0.12	0.06
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
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)	0.03	0.06	0.03	0.05
32	Aluminum as Al	mg/l	0.03(0.2)	0.02	0.01	0.02	0.02
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)	0.014	0.021	0.015	0.011
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
KORBA
Chhattisgarh**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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KORBA
Chhattisgarh**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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
(Manager - Environment)



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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	7.41	7.11	7.29
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)	2.5	2.7	1.5	1.1
6	Total dissolved solids at 180°C	mg/l	500(2000)	298	285	434	285
7	Total Hardness as CaCO ₃	mg/l	200(600)	173	130	205	176
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	95	110	140	85
9	Calcium as Ca	mg/l	75(200)	45.0	31.0	54.5	48.0
10	Magnesium as Mg	mg/l	30(100)	14.6	12.5	16.8	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)	0.09	0.03	0.11	0.08
13	Chlorides as Cl	mg/l	250(1000)	83.7	58.6	97.8	77.6
14	Sulphate as SO ₄	mg/l	200(400)	24.3	26.8	56.9	31.6
15	Fluorides as F	mg/l	1.0(1.5)	0.459	0.256	0.174	0.118
16	Nitrates as NO ₃	mg/l	45(NR)	3.2	2.1	3.9	2.9
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 as CN	mg/l	0.05(NR)	<0.02	<0.02	<0.02	<0.02

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)


Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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	0.02	0.03	0.02
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)	<0.01	<0.01	<0.01	<0.01
28	Iron as Fe	mg/l	0.3(NR)	0.17	0.19	0.08	0.06
29	Total Chromium as Cr	mg/l	0.05(NR)	<0.01	<0.01	<0.01	<0.01
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)	0.08	0.07	0.05	0.08
32	Aluminum as Al	mg/l	0.03(0.2)	0.03	0.02	0.01	0.02
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)	0.027	0.038	0.029	0.024
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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	Airazine	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	Chlorpyriphos	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


Vimta
VIMTA LABS
REGD. No. - DL 3300/99
Dr. Subba Reddy Mallampati
(Manager - Environment)
VIMTA

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

Report Number : VLL/VLS/25-26/18084/001
Issued Date : 2025-12-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-26
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
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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P.O. Date : 2025-10-01

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-21
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	-	7.54	7.26	7.84	7.39
2	Colour	Hazen	1	2	1	2
3	Conductivity	µS/cm	175	210	160	220
4	TDS	mg/l	108	115	98	130
5	DO	mg/l	6.7	6.1	6.3	6.0
6	BOD	mg/l	0.5	2.1	0.9	2.3
7	COD	mg/l	2.6	7.5	3.5	10.7
8	Turbidity	NTU	3.6	4.7	3.3	5.6
9	Total Hardness as CaCO ₃	mg/l	56	82	55	80
10	Total Alkalinity as CaCO ₃	mg/l	40	55	40	50
11	Calcium as Ca	mg/l	10.5	17	12.5	18
12	Magnesium as Mg	mg/l	7.3	9.5	5.9	8.4
13	Chlorides as Cl	mg/l	29.3	43.5	23.2	54.3
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.01	0.03	0.02	0.06
16	Sulphates as SO ₄	mg/l	5.2	8.6	4.8	7.5
17	Fluorides as F	mg/l	0.131	0.343	0.346	0.412
18	Nitrates as NO ₃	mg/l	1.1	2.3	0.9	2.8
19	Sodium as Na	mg/l	14.4	21.5	10.5	26.6
20	Potassium as K	mg/l	0.5	1.1	0.9	1.8
21	Total Boron as B	mg/l	0.01	0.078	0.017	0.095
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.02	<0.02	<0.02	<0.02
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	0.02	0.011
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.017	0.052	0.064	0.087
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	0.017	0.089	0.056	0.038
33	Aluminum as Al	mg/l	0.011	0.024	0.017	0.028
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.84	1.04	0.61	1.30
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	230	350	190	310

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)



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

Report Number : VLL/VLS/25-26/18084/002
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P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-11-10 Sampling Date : 2025-11-03
Analysis Starting Date : 2025-11-10 Analysis Completion Date : 2025-11-21
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	-	7.48	7.56	7.28	7.65	7.51
2	Colour	Hazen	2	3	2	3	3
3	Conductivity	µS/cm	160	218	175	182	157
4	TDS	mg/l	104	135	110	120	103
5	DO	mg/l	6.9	7.2	7.3	6.8	6.7
6	BOD	mg/l	1.5	1.7	1.9	2.8	2.6
7	COD	mg/l	5.2	6.8	6.6	9.3	8.1
8	Turbidity	NTU	4.3	5.6	5.2	5.4	5.7
9	Total Hardness as CaCO ₃	mg/l	40	60	50	52	45
10	Total Alkalinity as CaCO ₃	mg/l	40	45	40	55	50
11	Calcium as Ca	mg/l	10.8	15.3	14.2	15.5	12.5
12	Magnesium as Mg	mg/l	3.5	5.2	4.1	3.2	3.1
13	Chlorides as Cl	mg/l	21.1	34.6	25.7	19.8	14.2
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	0.01	0.02
16	Sulphates as SO ₄	mg/l	7.8	11.5	8.7	5.4	5.1
17	Fluorides as F	mg/l	0.436	0.384	0.534	0.413	0.521
18	Nitrates as NO ₃	mg/l	1.5	2.3	1.1	1.5	1.3
19	Sodium as Na	mg/l	17.2	21.7	15.8	16.7	14.8
20	Potassium as K	mg/l	1.2	1.4	1.1	2.1	1.2
21	Total Boron as B	mg/l	0.01	0.026	0.021	0.037	0.028
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02
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	0.035	0.073	0.041	0.053	0.067
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	0.021	0.096	0.072	0.084	0.049
33	Aluminum as Al	mg/l	0.013	0.026	0.018	0.015	0.021
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.16	1.22	0.95	1.01	0.97
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	210	340	280	320	330

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)



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
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)	7.17	7.24	6.98	7.32
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	2	2	1
6	Total dissolved solids at 180°C	mg/l	500(2000)	375	245	450	334
7	Total Hardness as CaCO ₃	mg/l	200(600)	180	150	220	197
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	140.0	85.0	170.0	120.0
9	Calcium as Ca	mg/l	75(200)	41.6	37.5	49.3	43.7
10	Magnesium as Mg	mg/l	30(100)	18.3	13.4	23.2	21.4
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)	0.027	0.019	0.021	0.017
13	Chlorides as Cl	mg/l	250(1000)	75.8	57.4	89.5	79.3
14	Sulphate as SO ₄	mg/l	200(400)	43.8	26.7	47.4	31.9
15	Fluorides as F	mg/l	1.0(1.5)	0.231	0.156	0.341	0.375
16	Nitrates as NO ₃	mg/l	45(NR)	3.1	2.5	3.9	2.8
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
KORBA
Chhattisgarh

Report Number : VLL/VLS/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
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)	0.007	0.012	0.009	0.013
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	0.021	0.045	0.029
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)	0.023	0.014	0.032	0.01
32	Aluminum as Al	mg/l	0.03(0.2)	0.017	0.022	0.013	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)	0.014	0.019	0.023	0.016
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/25-26/20775/001
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P.O. Date : 2025-10-01**

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
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


Dr. Subba Reddy Mallampati
(Manager Environment)

ISSUED TO:

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

**Report Number : VLL/VLS/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
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)	7.21	7.36	6.95	7.31
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	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	320	270	470	275
7	Total Hardness as CaCO ₃	mg/l	200(600)	200	125	221	166
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	90.0	95.0	160.0	80.0
9	Calcium as Ca	mg/l	75(200)	52.4	28.8	56.2	42.5
10	Magnesium as Mg	mg/l	30(100)	16.7	13.4	19.5	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)	0.024	0.013	0.035	0.018
13	Chlorides as Cl	mg/l	250(1000)	89.4	64.5	106.4	78.5
14	Sulphate as SO ₄	mg/l	200(400)	37.5	24.7	53.8	29.4
15	Fluorides as F	mg/l	1.0(1.5)	0.323	0.282	0.195	0.137
16	Nitrates as NO ₃	mg/l	45(NR)	4.8	1.9	4.1	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



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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

**Report Number : VLL/VLS/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	: 2025-12-11	Sampling Date	: 2025-12-02
Analysis Starting Date	: 2025-12-11	Analysis Completion Date	: 2025-12-30
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	0.02	<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	0.018	0.021	0.007
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)	0.015	0.027	0.038	0.014
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	0.022	0.029	0.018
32	Aluminum as Al	mg/l	0.03(0.2)	0.016	0.023	0.017	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)	0.012	0.021	0.015	0.021
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/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

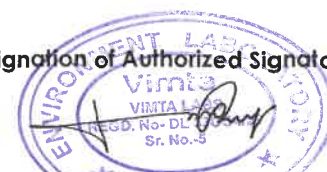
Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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	Chlorpyriphos	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

Report Number : VLL/VLS/25-26/20775/001
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P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-30
Test Required : Water Analysis as per IS 10500 : 2012

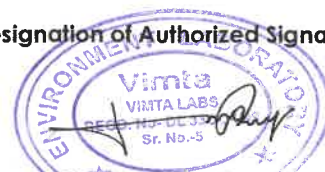
SAMPLE COLLECTED BY VIMTA LABS LTD.

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
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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Report Number : VLL/VLS/25-26/20775/001
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-27
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.

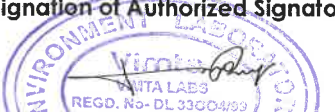
TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.48	7.31	7.65	7.28
2	Colour	Hazen	1	2	1	2
3	Conductivity	µS/cm	154	232	146	261
4	TDS	mg/l	95	143	90	160
5	DO	mg/l	7.1	6.7	6.9	6.4
6	BOD	mg/l	0.5	1.6	0.7	1.8
7	COD	mg/l	2.1	6.3	2.9	8.7
8	Turbidity	NTU	3.4	7.4	4.6	7.5
9	Total Hardness as CaCO ₃	mg/l	48	73	45	75
10	Total Alkalinity as CaCO ₃	mg/l	35	50	30	45
11	Calcium as Ca	mg/l	11.6	15.5	10.8	16.5
12	Magnesium as Mg	mg/l	4.6	8.3	4.3	7.8
13	Chlorides as Cl	mg/l	25.6	38.7	26.6	52.2
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	<0.01	0.02	0.03	0.03
16	Sulphates as SO ₄	mg/l	4.5	7.4	3.8	6.3
17	Fluorides as F	mg/l	0.156	0.197	0.184	0.212
18	Nitrates as NO ₃	mg/l	0.8	1.7	1.1	3.2
19	Sodium as Na	mg/l	13.1	18.9	12.6	24.8
20	Potassium as K	mg/l	0.4	1.2	0.8	2.3
21	Total Boron as B	mg/l	<0.01	0.018	0.009	0.043
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	0.018	0.065	0.048	0.027
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	0.015	0.098	0.056	0.038
33	Aluminum as Al	mg/l	0.016	0.021	0.026	0.018
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.82	0.96	0.82	1.26
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	260	140	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


VIMTA LABS
REGD. No- DL 3300489
Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

Report Number : VLL/VLS/25-26/20775/002
Issued Date : 2026-01-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS

: SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-12-11 Sampling Date : 2025-12-02
Analysis Starting Date : 2025-12-11 Analysis Completion Date : 2025-12-27
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Genwaghat, 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	7.43	7.15	7.54	7.27
2	Colour	Hazen	1	3	3	2	2
3	Conductivity	µS/cm	139	205	170	195	175
4	TDS	mg/l	90	126	110	125	112
5	DO	mg/l	7.2	6.8	7.2	6.8	6.9
6	BOD	mg/l	1.4	1.6	1.6	2.0	1.8
7	COD	mg/l	5.2	7.6	6.8	7.8	7.4
8	Turbidity	NTU	7.8	8.3	5.3	11.3	9.7
9	Total Hardness as CaCO ₃	mg/l	36	56	48	58	50
10	Total Alkalinity as CaCO ₃	mg/l	35	40	38	50	45
11	Calcium as Ca	mg/l	9.7	14.6	13.2	16.3	13.8
12	Magnesium as Mg	mg/l	2.9	4.8	3.7	4.1	3.5
13	Chlorides as Cl	mg/l	18.5	35.8	26.4	27.3	22.5
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	0.03	0.02	0.04	0.03
16	Sulphates as SO ₄	mg/l	5.9	7.8	6.4	7.3	8.4
17	Fluorides as F	mg/l	0.327	0.194	0.442	0.314	0.426
18	Nitrates as NO ₃	mg/l	1.2	2.1	1.4	1.3	1.1
19	Sodium as Na	mg/l	14.6	19.8	16.2	17.5	16.8
20	Potassium as K	mg/l	0.9	1.2	0.8	1.8	1.5
21	Total Boron as B	mg/l	<0.01	0.018	0.024	0.023	0.031
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	0.014	0.023	0.036	0.022	0.015
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	0.071	0.087	0.104	0.063	0.082
33	Aluminum as Al	mg/l	0.012	0.031	0.022	0.017	0.021
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.06	1.15	1.02	1.00	1.05
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	110	160	120	140	190

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

**Report Number : VLL/VLS/25-26/23223/001
Issued Date : 2026-02-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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)	6.95	6.81	6.80	7.27
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	3	2	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	490	258	480	427
7	Total Hardness as CaCO ₃	mg/l	200(600)	172	144	148	154
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	190	110	185	170
9	Calcium as Ca	mg/l	75(200)	46.4	36.8	38.4	43.2
10	Magnesium as Mg	mg/l	30(100)	13.6	12.6	12.6	11.2
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)	0.021	0.015	0.017	0.023
13	Chlorides as Cl	mg/l	250(1000)	87.5	49.3	125.2	58.1
14	Sulphate as SO ₄	mg/l	200(400)	30.1	18.7	40.9	27.8
15	Fluorides as F	mg/l	1.0(1.5)	0.128	0.106	0.360	0.271
16	Nitrates as NO ₃	mg/l	45(NR)	4.6	2.8	5.9	3.8
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

Report Number : VLL/VLS/25-26/23223/001
Issued Date : 2026-02-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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	0.008	<0.01	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)	0.047	0.016	0.034	0.018
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)	0.016	0.008	0.024	<0.01
32	Aluminum as Al	mg/l	0.03(0.2)	0.014	0.011	0.018	0.023
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	0.027	0.018
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

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Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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

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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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
(Manager - Environment)

Vimta Labs Limited

Registered Office
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Hyderabad-500 051, Telangana, India
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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)	7.34	7.00	6.90	6.87
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	3	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	285	310	193	358
7	Total Hardness as CaCO ₃	mg/l	200(600)	150	100	102	128
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	140	110	70	80
9	Calcium as Ca	mg/l	75(200)	32.8	20.8	25.6	30.4
10	Magnesium as Mg	mg/l	30(100)	16.5	11.7	9.2	12.6
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)	0.032	0.019	0.042	0.015
13	Chlorides as Cl	mg/l	250(1000)	42.5	74.8	38.6	131.2
14	Sulphate as SO ₄	mg/l	200(400)	16.8	21.6	23.1	23.0
15	Fluorides as F	mg/l	1.0(1.5)	0.388	0.250	0.179	0.125
16	Nitrates as NO ₃	mg/l	45(NR)	2.9	3.4	2.8	3.7
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



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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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	0.019	0.008
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)	0.012	0.039	0.046	0.012
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)	0.015	0.026	0.031	0.013
32	Aluminum as Al	mg/l	0.03(0.2)	0.019	0.027	0.013	0.01
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)	0.014	0.029	0.012	0.029
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

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Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

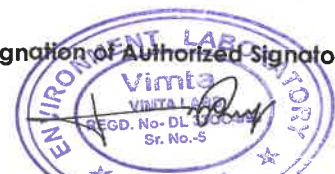
Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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

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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-29
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

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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-24
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	-	7.48	7.31	7.65	7.28
2	Colour	Hazen	1	2	1	2
3	Conductivity	µS/cm	134	210	150	100
4	TDS	mg/l	85	132	95	135
5	DO	mg/l	6.8	5.2	5.4	5.6
6	BOD	mg/l	0.6	1.9	0.8	2.0
7	COD	mg/l	2.4	7.2	3.2	9.6
8	Turbidity	NTU	5.0	8.0	7.0	9.0
9	Total Hardness as CaCO ₃	mg/l	38	65	46	48
10	Total Alkalinity as CaCO ₃	mg/l	30	50	40	42
11	Calcium as Ca	mg/l	9.6	12.8	11.2	10.4
12	Magnesium as Mg	mg/l	3.4	8.3	4.4	5.3
13	Chlorides as Cl	mg/l	16.0	22.5	16.0	28.8
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.01	0.04	0.02	0.05
16	Sulphates as SO ₄	mg/l	13.0	18.8	10.5	19.9
17	Fluorides as F	mg/l	0.108	0.133	0.126	0.163
18	Nitrates as NO ₃	mg/l	0.50	0.90	0.80	0.90
19	Sodium as Na	mg/l	12.6	16.5	12.6	24.8
20	Potassium as K	mg/l	1.1	1.6	0.8	2.3
21	Total Boron as B	mg/l	0.010	0.013	0.010	0.038
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	0.054	0.037	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	0.011	0.067	0.041	0.015
33	Aluminum as Al	mg/l	0.012	0.018	0.024	0.022
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.89	0.88	0.81	1.56
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	9.4	38	14	35

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

Report Number : VLL/VLS/25-26/23223/002
Issued Date : 2026-02-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : **SURFACE WATER SAMPLE (BALCO PLANT)**
Sample Registration Date : 2026-01-09 Sampling Date : 2026-01-03
Analysis Starting Date : 2026-01-10 Analysis Completion Date : 2026-01-24
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	-	7.31	7.37	7.42	7.39	7.27
2	Colour	Hazen	1	2	2	3	2
3	Conductivity	µS/cm	154	182	167	180	164
4	TDS	mg/l	97	115	104	110	103
5	DO	mg/l	7.7	7.9	7.4	7.1	7.3
6	BOD	mg/l	1.5	1.7	1.7	2.2	1.9
7	COD	mg/l	5.6	8.0	7.2	8.8	8.0
8	Turbidity	NTU	6.0	8.0	6.0	9.0	8.0
9	Total Hardness as CaCO ₃	mg/l	50	57	50	52	46
10	Total Alkalinity as CaCO ₃	mg/l	30	43	40	41	35
11	Calcium as Ca	mg/l	10.5	13.2	10.4	10.4	11.2
12	Magnesium as Mg	mg/l	5.3	5.8	5.8	6.3	4.4
13	Chlorides as Cl	mg/l	26.0	27.0	24.0	26.8	25.8
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	0.03	0.05	0.04
16	Sulphates as SO ₄	mg/l	9.4	6.8	6.2	8.2	7.9
17	Fluorides as F	mg/l	0.442	0.587	0.523	0.608	0.537
18	Nitrates as NO ₃	mg/l	0.8	1.7	1.1	1.2	0.9
19	Sodium as Na	mg/l	13.6	15.2	14.8	16.4	15.6
20	Potassium as K	mg/l	0.7	1.1	0.6	1.4	1.3
21	Total Boron as B	mg/l	<0.01	0.021	0.032	0.027	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	0.011	0.035	0.028	0.019	0.023
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	0.058	0.073	0.098	0.043	0.065
33	Aluminum as Al	mg/l	0.019	0.036	0.021	0.015	0.031
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.85	0.88	0.91	0.99	1.00
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	32	39	34	38	33

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
KORBA
Chhattisgarh**

**Report Number : VLL/VLS/25-26/24935/001
Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
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)	6.92	6.89	6.83	7.23
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	4	2	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	395	265	421	410
7	Total Hardness as CaCO ₃	mg/l	200(600)	172	150	128	156
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	160	100	140	158
9	Calcium as Ca	mg/l	75(200)	41.6	43.2	36.8	46.4
10	Magnesium as Mg	mg/l	30(100)	16.5	10.2	8.7	9.7
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)	0.037	0.019	0.023	0.015
13	Chlorides as Cl	mg/l	250(1000)	136.1	66.1	143.8	64.1
14	Sulphate as SO ₄	mg/l	200(400)	27.1	18.9	39.1	26.1
15	Fluorides as F	mg/l	1.0(1.5)	0.131	0.098	0.342	1.450
16	Nitrates as NO ₃	mg/l	45(NR)	3.6	2.1	4.7	4.1
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

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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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BALCO
KORBA
Chhattisgarh**

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Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

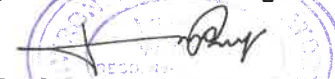
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	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)	0.013	<0.01	0.008	<0.01
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)	0.038	0.012	0.027	0.011
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)	0.024	0.010	0.021	0.01
32	Aluminum as Al	mg/l	0.03(0.2)	0.013	0.023	0.015	0.018
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	0.018	0.021	0.014
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

**Report Number : VLL/VLS/25-26/24935/001
Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

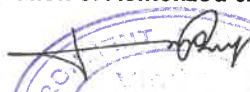
Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
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
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

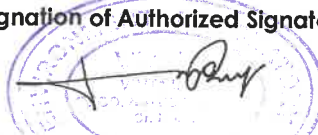
Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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)	7.42	7.03	6.94	6.81
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	3	4	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	212	310	202	360
7	Total Hardness as CaCO ₃	mg/l	200(600)	124	136	106	102
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	95	110	80	95
9	Calcium as Ca	mg/l	75(200)	30.8	35.2	27.2	20.0
10	Magnesium as Mg	mg/l	30(100)	11.5	11.7	9.2	12.6
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)	0.045	0.012	0.035	0.017
13	Chlorides as Cl	mg/l	250(1000)	35.5	78.1	37.2	110.0
14	Sulphate as SO ₄	mg/l	200(400)	18.4	21.6	21.9	33.2
15	Fluorides as F	mg/l	1.0(1.5)	0.369	0.287	0.164	0.131
16	Nitrates as NO ₃	mg/l	45(NR)	2.2	3.9	2.1	3.2
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

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Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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ISSUED TO:

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

Report Number : VLL/VLS/25-26/24935/001
Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
Test Required : Water Analysis as per IS 10500 : 2012

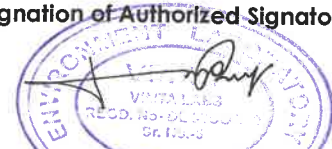
SAMPLE COLLECTED BY VIMTA LABS LTD.

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)	0.012	0.009	0.014	<0.01
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)	0.015	0.031	0.039	0.026
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	0.029	0.034	0.021
32	Aluminium as Al	mg/l	0.03(0.2)	0.013	0.016	0.024	0.021
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	0.017	0.015	0.023
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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KORBA
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**Report Number : VLL/VLS/25-26/24935/001
Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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P.O. No. : 3402001553
P.O. Date : 2025-10-01

Page 4 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-26
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
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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P.O. No. : 3402001553
P.O. Date : 2025-10-01

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-23
Samples Details : SW1-Baigiri Nala (U/S)-Near Baigiri Village, SW2-Baigiri 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.

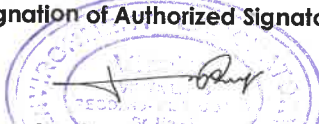
TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	6.79	7.21	7.34	7.41
2	Colour	Hazen	1	3	2	4
3	Conductivity	µS/cm	185	142	84	114
4	TDS	mg/l	97	158	112	144
5	DO	mg/l	6.7	4.9	5.1	5.7
6	BOD	mg/l	0.8	1.7	1.0	1.8
7	COD	mg/l	3.2	6.4	4.0	8.8
8	Turbidity	NTU	4.0	7.0	8.0	6.0
9	Total Hardness as CaCO ₃	mg/l	52	72	50	68
10	Total Alkalinity as CaCO ₃	mg/l	33	58	38	48
11	Calcium as Ca	mg/l	12.0	19.2	12.0	18.4
12	Magnesium as Mg	mg/l	5.3	5.8	4.9	5.3
13	Chlorides as Cl	mg/l	16.0	22.5	16.0	28.8
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.02	0.035	0.03	0.046
16	Sulphates as SO ₄	mg/l	16.6	29.8	19.7	21.6
17	Fluorides as F	mg/l	0.075	0.284	0.132	0.358
18	Nitrates as NO ₃	mg/l	0.5	0.9	0.8	0.9
19	Sodium as Na	mg/l	12.6	16.5	12.6	24.8
20	Potassium as K	mg/l	1.1	1.6	0.8	2.3
21	Total Boron as B	mg/l	<0.01	0.012	0.008	0.026
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	0.017	0.048	0.026	0.031
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	0.023	0.054	0.038	0.018
33	Aluminum as Al	mg/l	0.011	0.021	0.018	0.034
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.76	0.85	0.78	1.31
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	11	36	18	42

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

Report Number : VLL/VLS/25-26/24935/002
Issued Date : 2026-03-05
P.O. No. : 3402001553
P.O. Date : 2025-10-01

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SAMPLE PARTICULARS

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2026-02-09 Sampling Date : 2026-02-04
Analysis Starting Date : 2026-02-09 Analysis Completion Date : 2026-02-23
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

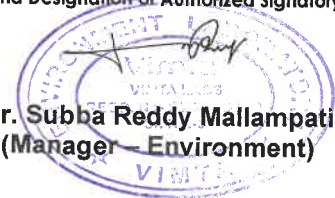
Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7.35	7.36	7.58	7.24	7.22
2	Colour	Hazen	1	3	3	4	2
3	Conductivity	µS/cm	176	165	154	168	159
4	TDS	mg/l	110	98	90	105	102
5	DO	mg/l	7.2	7.6	7.3	7.4	7.6
6	BOD	mg/l	1.2	1.5	1.8	2.1	1.9
7	COD	mg/l	4.8	7.2	8.0	8.5	8.0
8	Turbidity	NTU	7.0	9.0	6.0	11.0	8.0
9	Total Hardness as CaCO ₃	mg/l	50	54	51	52	50
10	Total Alkalinity as CaCO ₃	mg/l	43	40	40	42	41
11	Calcium as Ca	mg/l	11.2	12.0	12.8	10.4	12.8
12	Magnesium as Mg	mg/l	5.3	5.8	4.7	6.3	4.4
13	Chlorides as Cl	mg/l	26.0	27.0	24.0	26.8	25.8
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	0.062	0.041	0.06	0.05
16	Sulphates as SO ₄	mg/l	7.8	4.1	5.2	7.6	6.1
17	Fluorides as F	mg/l	0.407	0.564	0.502	0.589	0.542
18	Nitrates as NO ₃	mg/l	1.1	1.8	1.6	1.4	1.2
19	Sodium as Na	mg/l	16.7	12.5	11.5	14.0	13.1
20	Potassium as K	mg/l	1.1	1.0	0.8	1.2	1.1
21	Total Boron as B	mg/l	<0.01	0.018	0.029	0.034	0.015
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	0.042	0.034	0.022	0.031
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	0.047	0.065	0.087	0.035	0.049
33	Aluminum as Al	mg/l	0.026	0.041	0.029	0.013	0.025
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.03	0.74	0.70	0.84	0.81
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	34	32	35	39	38

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)



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142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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Chhattisgarh

Report Number : VLL/VLS/25-26/28724/001
Issued Date : 2026-04-04
P.O. No. : 3402001553
P.O. Date : 2025-10-01

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
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)	6.84	7.15	6.81	7.03
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	3	2	3
6	Total dissolved solids at 180°C	mg/l	500(2000)	604	262	624	403
7	Total Hardness as CaCO ₃	mg/l	200(600)	294	118	267	231
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	180	90	230	195
9	Calcium as Ca	mg/l	75(200)	71.2	26.8	74.0	64.8
10	Magnesium as Mg	mg/l	30(100)	28.2	12.4	20.0	16.7
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)	0.026	0.012	0.037	0.023
13	Chlorides as Cl	mg/l	250(1000)	163.8	54	143.1	55.2
14	Sulphate as SO ₄	mg/l	200(400)	65.8	34.1	46.8	29.7
15	Fluorides as F	mg/l	1.0(1.5)	0.246	0.404	0.680	1.070
16	Nitrates as NO ₃	mg/l	45(NR)	4.9	3.2	5.2	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	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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
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F : +91 40 2726 3657



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P.O. Date : 2025-10-01

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

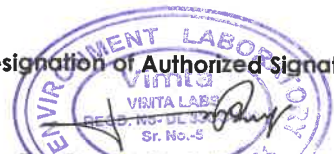
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Rogbheri (B/W)	Rogbheri (D/W)	Bailgiri Basti(B/W)	Bailgiri Basti(D/W)
19	Anionic detergents as MBAS	mg/l	0.2(1.0)	<0.02	<0.02	<0.02	<0.02
20	Mineral oil	mg/l	0.5(NR)	Absent	Absent	Absent	Absent
21	Cadmium as Cd	mg/l	0.003(NR)	<0.003	<0.003	<0.003	<0.003
22	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)	0.011	<0.005	0.012	<0.005
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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	0.01	0.019	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)	<0.001	<0.001	<0.001	<0.001
31	Zinc as Zn	mg/l	5.0(15)	0.034	0.013	0.027	0.016
32	Aluminum as Al	mg/l	0.03(0.2)	0.021	0.016	0.018	0.023
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	0.019	0.028	0.017
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO:

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

**Report Number : VLL/VLS/25-26/28724/001
Issued Date : 2026-04-04
P.O. No. : 3402001553
P.O. Date : 2025-10-01**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
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)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
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
(Manager - Environment)

Vimta Labs Limited

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142, IDA Phase II, Cherlapally
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
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)	7.39	6.79	6.72	6.92
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	4	3	2
6	Total dissolved solids at 180°C	mg/l	500(2000)	300	147	174	335
7	Total Hardness as CaCO ₃	mg/l	200(600)	144	50	90	146
8	Total Alkalinity as CaCO ₃	mg/l	200(600)	120	50	60	60
9	Calcium as Ca	mg/l	75(200)	36.0	8.8	19.2	32.0
10	Magnesium as Mg	mg/l	30(100)	13.1	6.8	10.2	16.0
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)	0.034	0.011	0.028	0.031
13	Chlorides as Cl	mg/l	250(1000)	68.4	31	37.5	135
14	Sulphate as SO ₄	mg/l	200(400)	17.5	16.5	21.1	27.1
15	Fluorides as F	mg/l	1.0(1.5)	0.960	0.428	0.232	0.309
16	Nitrates as NO ₃	mg/l	45(NR)	1.9	3.1	3.5	2.9
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 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



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

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date	: 2026-03-10	Sampling Date	: 2026-03-03
Analysis Starting Date	: 2026-03-11	Analysis Completion Date	: 2026-03-25
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)	0.008	0.01	0.017	<0.005
26	Molybdenum as Mo	mg/l	0.07(NR)	<0.001	<0.001	<0.001	<0.001
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)	0.013	0.028	0.024	0.031
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)	<0.001	<0.001	<0.001	<0.001
31	Zinc as Zn	mg/l	5.0(15)	0.028	0.031	0.025	0.018
32	Aluminum as Al	mg/l	0.03(0.2)	0.027	0.015	0.029	0.014
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)	0.020	0.025	0.013	0.018
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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

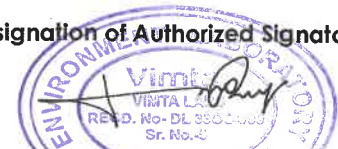
Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

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	Bromoforn	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	Chloroforn	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

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Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
 Analysis Starting Date : 2026-03-11 Analysis Completion Date : 2026-03-25
 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. Subba Reddy Mallampati
 (Manager - Environment)**

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-10 Analysis Completion Date : 2026-03-23
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.

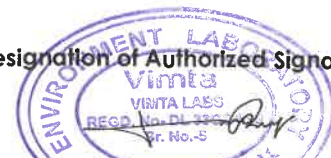
TEST REPORT

Sr. No.	Parameters	Unit	SW1	SW2	SW3	SW4
1	pH	-	7.03	7.69	7.68	6.19
2	Colour	Hazen	1	2	1	3
3	Conductivity	µS/cm	56	243	88	115
4	TDS	mg/l	60	150	75	72
5	DO	mg/l	6.3	4.4	5.8	5.2
6	BOD	mg/l	0.5	3.0	2.0	1.5
7	COD	mg/l	1.6	11.2	7.2	6.4
8	Turbidity	NTU	3.0	8.0	6.0	8.0
9	Total Hardness as CaCO ₃	mg/l	18	68	32	42
10	Total Alkalinity as CaCO ₃	mg/l	14	55	25	45
11	Calcium as Ca	mg/l	4.8	16.0	6.4	8.8
12	Magnesium as Mg	mg/l	1.5	6.8	3.9	4.9
13	Chlorides as Cl	mg/l	15.0	21.0	16.3	19.7
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.023	0.032	0.011	0.024
16	Sulphates as SO ₄	mg/l	10.6	12.5	10.0	22.7
17	Fluorides as F	mg/l	0.186	0.284	0.351	0.399
18	Nitrates as NO ₃	mg/l	0.3	1.1	1.0	1.2
19	Sodium as Na	mg/l	12.6	16.5	12.6	24.8
20	Potassium as K	mg/l	1.1	1.6	0.8	2.3
21	Total Boron as B	mg/l	<0.005	0.015	0.009	0.032
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	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.010	0.035	0.014	0.031
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.017	0.048	0.021	0.032
33	Aluminum as Al	mg/l	0.008	0.031	0.010	0.025
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	1.29	0.87	0.97	1.67
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	13	42	26	38

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)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



Driven by Quality. Inspired by Science.

ISSUED TO:

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

Report Number : VLL/VLS/25-26/28724/002
Issued Date : 2026-04-04
P.O. No. : 3402001553
P.O. Date : 2025-10-01

Page 1 of 1

SAMPLE PARTICULARS

: SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2026-03-10 Sampling Date : 2026-03-03
Analysis Starting Date : 2026-03-10 Analysis Completion Date : 2026-03-23
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

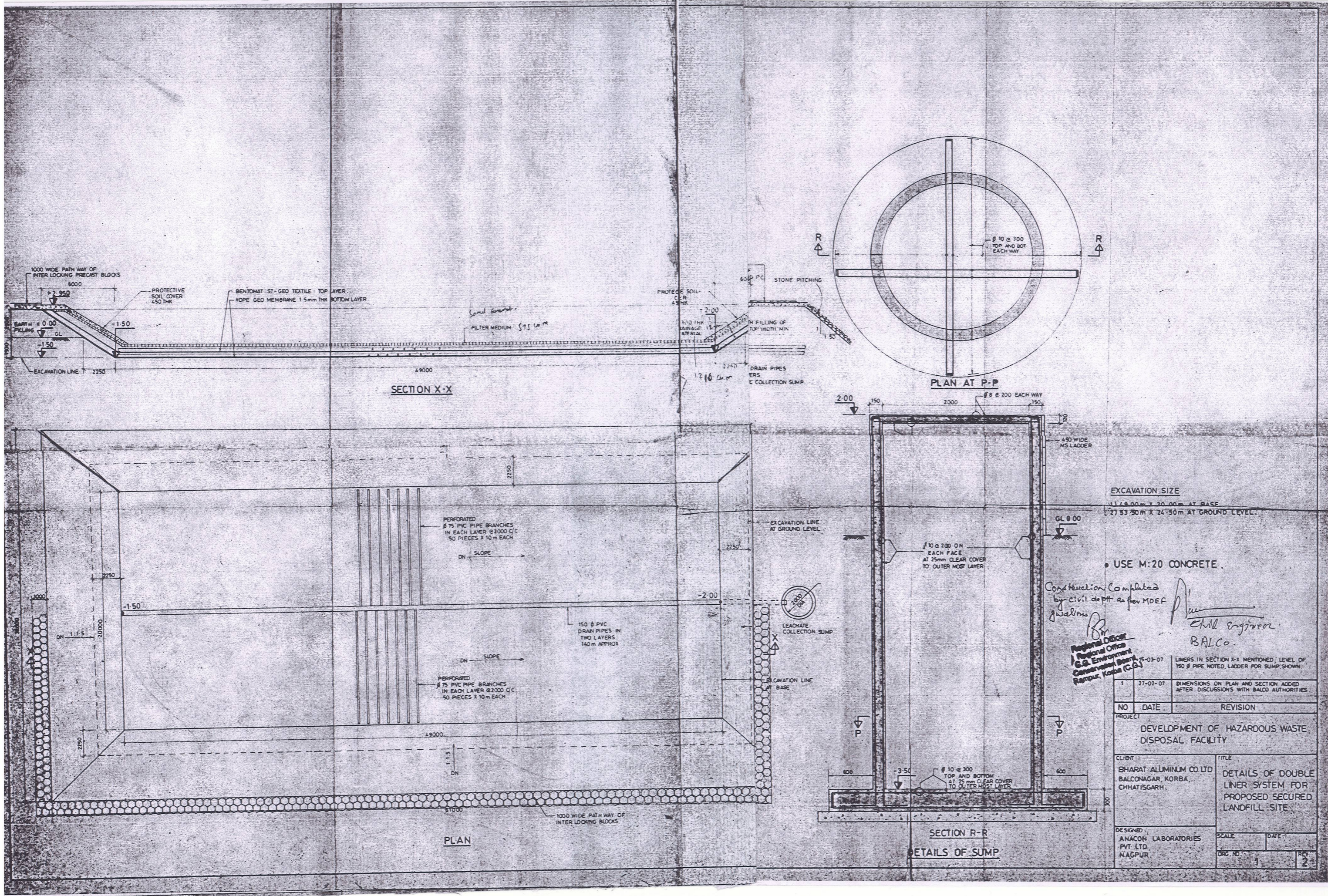
Sr. No.	Parameters	Unit	SW5	SW6	SW7	SW8	SW9
1	pH	-	7	7.31	7.46	7.21	7.26
2	Colour	Hazen	1	2	2	3	2
3	Conductivity	µS/cm	164	172	161	169	162
4	TDS	mg/l	105	108	103	110	105
5	DO	mg/l	7.6	7.4	7.1	7.5	7.7
6	BOD	mg/l	1.6	1.9	1.7	2.0	1.9
7	COD	mg/l	5.6	6.4	5.6	7.2	6.4
8	Turbidity	NTU	5.0	7.0	8.0	6.0	9.0
9	Total Hardness as CaCO ₃	mg/l	50	52	56	54	52
10	Total Alkalinity as CaCO ₃	mg/l	40	42	45	40	42
11	Calcium as Ca	mg/l	12.8	12	14.4	15.2	14.4
12	Magnesium as Mg	mg/l	4.8	5.3	4.8	3.9	4.0
13	Chlorides as Cl	mg/l	25.0	26.4	21.1	24.8	22.3
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.013	0.028	0.017	0.021	0.015
16	Sulphates as SO ₄	mg/l	5.9	4.4	4.7	6.9	5.4
17	Fluorides as F	mg/l	0.623	0.594	0.576	0.621	0.619
18	Nitrates as NO ₃	mg/l	0.5	0.9	0.6	1.2	1.1
19	Sodium as Na	mg/l	14.2	15.1	11.5	13.5	12.8
20	Potassium as K	mg/l	0.8	1.1	0.7	1.1	1.0
21	Total Boron as B	mg/l	<0.005	0.016	0.018	0.025	0.019
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	<0.005	<0.005	<0.005	<0.005	<0.005
26	Arsenic as As	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
27	Copper as Cu	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
28	Lead as Pb	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
29	Iron as Fe	mg/l	0.015	0.031	0.027	0.029	0.036
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005
32	Zinc as Zn	mg/l	0.039	0.051	0.041	0.036	0.031
33	Aluminum as Al	mg/l	0.028	0.036	0.024	0.019	0.027
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.86	0.91	0.67	0.80	0.77
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	47	52	44	72	67

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

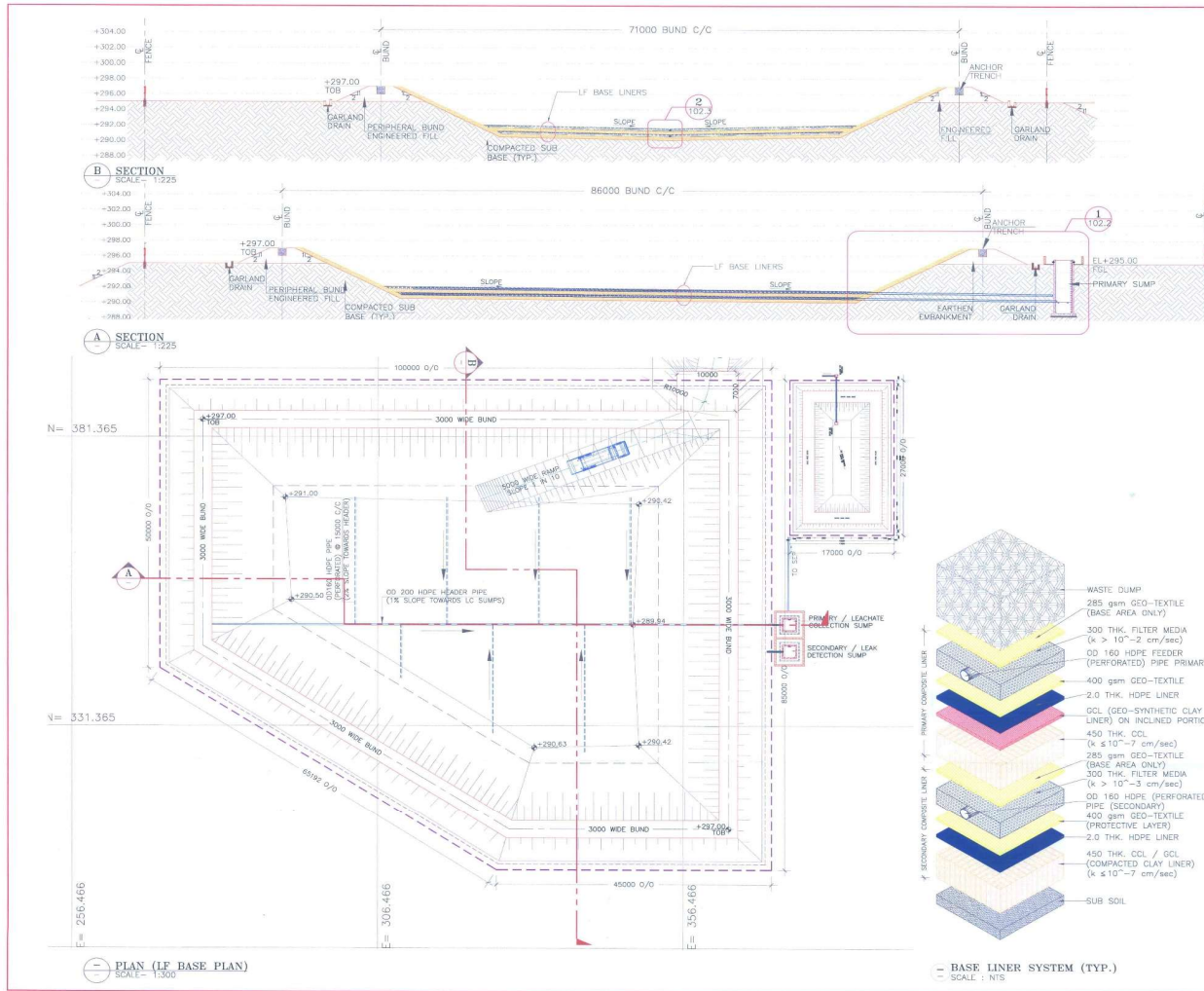
-END OF THE REPORTS-

Name and Designation of Authorized Signatory

VIMTA LABS
REGD. No- DL 33004/99
Sr. No. 8
Dr. Subba Reddy Mallampati
(Manager - Environment)



NO	DATE	REVISION
1	27-02-07	DIMENSIONS ON PLAN AND SECTION ADDED AFTER DISCUSSIONS WITH BALCO AUTHORITIES
PROJECT DEVELOPMENT OF HAZARDOUS WASTE DISPOSAL FACILITY		
CLIENT SHARAT ALUMINUM CO.LTD BALCONAGAR, KORBA, CHHATISGARH.	TITLE DETAILS OF DOUBLE LINER SYSTEM FOR PROPOSED SECURED LANDFILL SITE	
DESIGNED ANACON LABORATORIES PVT.LTD. NAGPUR.	SCALE	DATE
DRG. NO.	1	REV 2



CONCRETE DRAWING

GENERAL NOTES

- ALL DIMENSIONS IN MILLIMETERS, LEVELS, GRIDS & COORDINATES IN METERS UNLESS OTHERWISE STATED.
- THE COORDINATES INDICATED IN THE DRAWING IS TO BE VERIFIED PROPERLY BEFORE EXECUTION.
- DO NOT SCALE DRAWING, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- ANY DISCREPANCIES NOTED SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO EXECUTION.
- ROAD WIDTH SHOWN ARE INCLUSIVE OF BERMS & STORM WATER DRAINS SHALL BE EXECUTED AS PER SITE GRADING.

SYMBOLS / ABBREVIATIONS

- CL : CENTER LINE
- m : METER
- sqm : SQUARE METER
- rmt : RUNNING METER
- RCC : REINFORCED CEMENT CONCRETE
- M/C : MATERIAL OF CONSTRUCTION
- NGL : NATURAL GROUND LEVEL
- FGL : FINISHED GROUND LEVEL
- S/LF : SECURED LANDFILL
- SPL : SPENT POT LINER
- TYP. : TYPICAL
- TOB : TOP OF BUND
- BOP : BOTTOM OF PIPE
- HDPE : HIGH DENSITY POLYETHYLENE
- CCL : COMPACTED CLAY LINER
- GCL : GEOSYNTHETIC CLAY LINER

FOR APPROVAL

S.NO	REVISION/ISSUE	APPROVED

DRAWN	CHECKED	APPROVED

CLIENT:
BHARAT ALUMINIUM COMPANY LIMITED
PLANT II, P.O. BALCO NAGAR, KORBA,
CHHATTISGARH, INDIA - 495 684

PROJECT:
SECURED LANDFILL FOR DISPOSAL OF
SPENT POT LINER AT PLANT - II

TURNKEY CONTRACTOR:

RAMKY ENVIRO ENGINEERS LIMITED
Floor - 12 & 13, Ramji Grounds,
Rajendra Nagar, Connaught Place,
New Delhi, India, Pincode - 110028
Gurgaon, Haryana - 122002
Tel: +91 42 2381 5000

TITLE:
BASE PLAN, SECTIONS & TYPICAL C/S
SLF FOR DISPOSAL OF SPL (PH.1)

DRG. NO: REEL/HW/BALCO/GA/102	N
DATE: 18.02.14	SHEET: A1
SCALE: AS SHOWN	PAGE: 1 OF 1



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
2025-26	77139	0	-	-	77139	0

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	<p>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]</p> <p>Phasing out Wet Scrubbing System for Fluoride. For Pre-baked Technology 0.8 kg/T by December 2006</p> <p>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.</p> <p>Monitoring of fugitive emissions from pot rooms. To start with Indal or any better method & submit data from aryl 2004, regularly to SPCBs & CPCB</p>	<p>-</p> <p>BALCO is operating pre-baked Aluminium smelter.</p> <p>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.</p> <p>Fugitive fluoride is being monitored and reports being submitted to CECB monthly and to Ministry with half Yearly compliance report.</p>

3	Fluoride Consumption	<p>Fluoride consumption tonnes of aluminum produced (as F) [For Soderberg Technology 15 kg/t by December 2005, For Pre-baked technology 10kg/t by December 2005]</p>	<p>CREP (Corporate Responsibility for Environmental 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 are complying to the same and it is within the specified limit.</p>
4	Ambient Fluoride	<p>Forage fluoride standards (Dry weight basis) * Twelve consecutive months average-40 ppm * Two consecutive months Average- 60 ppm * One month – 80 ppm</p> <p>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</p>	<p>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.</p>
5	Spent Pot Lining (SPL)	<p>Setting up a centralized SPL treatment & disposal facility with aluminum fluoride recovery and utilization of SPL in steel/ cement industries</p> <p>Limit for pot life, (for new pots installed after December 31, 2003 2500 day (average)</p>	<p>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.</p> <p>BALCO has adopted Pre-baked technology and improvement</p>

		SPL (Carbon & Refractory) to be disposed in Secured Landfill	<p>project undertaken to maximize the lining life to an average of 2500 days.</p> <p>The SPL-Carbon portion generated from smelter is being sent to authorized co-processor M/s. Greenmac Technology at Raipur, M/s Gati Greens India Private Limited, M/s Shri Industries, Raipur 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.</p> <p>SPL refractory disposal to cement industry for co-processing and KESDA TSDF has been initiated in FY 26 as per approved Hazardous waste Authorization. The disposal of SPL refractory in FY 26 is 20,174 Tonnes. The remaining stock will be disposed off within 18 months from the date of approved Standard Operating Procedure (SOPs) by CPCB. 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, 26.09.2025 and 07.04.2026.</p>
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.	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.
7	Anode Baking Oven	Achieving particulate matter limit of 50 mg/Nm ³ by Dec. 2005	Particulate emission from Bake Oven is within the specified limit.

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) <ul style="list-style-type: none">• 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 SO ₂ & NO _x emission standards for coal based plants by December 2003. <ul style="list-style-type: none">• 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 SO ₂ 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 Emission Monitoring System has been installed in all the units, and they are connected to CPCB/CECB server. 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	The stack height of Power Plant is 275 m and it is as per the guidelines for power plants.

8	<p>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</p> <ul style="list-style-type: none"> • 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.	Fly ash has been sent to different avenues like Road Construction, NHAI, Cement Industry, Brick Manufacturing Units and Mine void filling for utilization.
11	Power Plants should provide dry fly ash free of cost to the users	We are 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	<p>(i) New plants to be accorded environmental clearance on or after 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.</p> <p>(ii) Existing plants shall adopt any of the systems mentioned in 13 (i) by December 2004.</p>	The unit has adopted High Concentration Slurry Disposal (HCSD) method for ash 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.

BALCO/ENV/A-02(A)/2025/493

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 Report (April 2025 to September 2025) of the expansion of Aluminum Smelter Plant (3.5 to 9.0 LTPA) and Captive Power Plant (300MW) at Korba, Chhattisgarh by BALCO

Respected Sir,

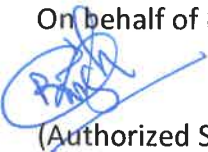
As per the Environmental Clearance (No. J- 11011/123/2007.IA-II (I) dated 16.09.2008 received for the Expansion of Smelter & Power Plant, M/s Bharat Aluminium Company Limited, Korba has set up the smelter plant, phase-1, (3.25 LTPA). Please find enclosed herewith the compliance report along with the necessary supporting documents.

We hope that the above is in line with the provisions stipulated in the Environmental Clearance. If you require any further information, we will be glad to provide the same.

Thanking you,

Yours Truly,

On behalf of Bharat Aluminum Company Ltd.



(Authorized Signatory)

Encl: a/a

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



Implementation Status of Public Hearing Commitments held in 2007

#	Statement of main issues raised by the public	Comments of the PP	Implementation Status
1	Polluted air and ash emitted from industry will affect the nearby area	High efficiency pollution control equipment's will be provided and the fly ash generated shall be utilized as per the Fly ash notification amended from time to time.	High efficiency FTPs with dry scrubbing systems have been implemented in Smelter Pot Line and Bake Oven Plant. Further dust collection & Dust Extraction systems have been implemented. Closed circuit conveying systems have been adopted. Hybrid ESP (ESP followed with bag filters) have been implemented in Power Plants. High Concentration Slurry Disposal system (HCSD) has been implemented for disposal of ash in slurry form to dykes. Fly ash being utilized as per Fly ash notification, accordingly 100 % fly ash utilization has been achieved for power plants 540 MW and 1200 MW from last 4 years.
2	Establishment of industry will pollute the nearby area	Environment friendly techniques like high efficiency ESPs, High density slurry disposal system, fume treatment plant and dry scrubbing system shall be adopted. Further, zero effluent discharge system shall be adopted which will help in keeping the pollution below the norms.	Hybrid ESP's (ESP followed with bag filters), HCSD System, FTP with dry scrubbing system at Smelter plant, ETP with RO has been provided. CEMs & CAAQMS have been provided for online and real time monitoring.
3	Employment should be provide to the local people	Employment to the 60% of the local people have been provided. In future, also employment shall be provided to the local people as per their qualification and ability.	Following is the detail for employment provided: Executives: 64% from Chhattisgarh and 36 % from other states. Workman: 99% from Chhattisgarh and 1 % from other states.

Implementation Status of Public Hearing Commitments held in 2007

			Contract Employees: 88 % from Chhattisgarh and 12 % from other states.
4	Extensive and massive plantation should be carried out surrounding the industrial premises	So far adequate green cover has been developed by planting lakhs of trees in and around the plant premises by the industry. Further, extensive and massive plantation shall be carried out in and around the industrial premises in available open areas.	Plantation target as per statutory requirement has been achieved.
5	Medical facilities to the nearby villages should be provided	Nearby villages around plant premises have already been provided medical facilities regularly. Time to time medical facilities shall be provided through organizing health camps.	BALCO hospital is providing medical facility to the nearby communities. Further Mobile Health Van has been put in to service for medical needs of the nearby villages.
6	New smelter and power plant should not be established in the area where the old plant is established	New smelter and power plant will be established in our own land within the Industrial premises of the Company and the same is falling under the jurisdiction of Nagar Nigam, Korba.	Expansion has been carried out in the BALCO's industrial premises. No additional land was procured for the expansion.
7	Industry is not aware of mitigation of pollution issues	Industry shall install appropriate and effective pollution controlling devices in all source point to minimize the pollution as per the norms laid down by the board. Separate fund for pollution abatement activity shall be provided to mitigate pollution.	Industry has provided latest technology pollution control equipment for control of Air pollution, Water pollution like FTP's, Hybrid ESP's, ETP with RO etc, and the CEMs and CAAQMS have been installed for online real time monitoring and connected to CPCB server.

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/18084/009
	Issue Date:	2025-12-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

AMBIENT AIR QUALITY MONITORING AT NEW TOWNSHIP PROJECT (BALCO)

Analysis starting date :- 2025-11-03

Analysis Completion date :- 2025-12-04

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 TOWNSHIP PROJECT										Method
			2025-11-01	2025-11-06	2025-11-08	2025-11-12	2025-11-14	2025-11-18	2025-11-20	2024-11-24	2025-11-26		
Sulphur Dioxide as SO ₂	µg/m ³	80	22.9	26.1	18.6	23.9	15.6	21.8	19.6	17.7	20.9	IS 5182 (PART-2) RA 2017	
Oxides of Nitrogen as NO ₂	µg/m ³	80	10.8	9.5	11.7	10.2	10.9	7.8	8.7	13.0	13.7	IS 5182 (PART-6) RA 2017	
Particulate Matter (PM ₁₀)	µg/m ³	100	45.3	50.9	56.4	48.7	53.2	51.9	58.6	63.2	54.1	IS 5182 (PART-23) RA 2017	
Particulate Matter (PM _{2.5})	µg/m ³	60	15.4	17.9	19.7	18.3	21.1	24.5	22.7	24.9	21.6	IS 5182 (PART-24) 2019	
Ammonia as NH ₃	µg/m ³	400	0.8	1.0	0.7	1.1	0.9	1.2	1.0	1.3	1.1	APHA 401	
Benzene as 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	IS 5182 (PART-11) RA 2017	
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	IS 5182 (PART-12) RA 2019	
Arsenic as As	ng/m ³	6	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	USEPA IO 3.4	
Nickel as Ni	ng/m ³	20	5.1	4.6	5.7	6.4	5.2	4.7	3.9	5.2	4.4	USEPA IO 3.4	
Lead as Pb	µg/m ³	1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	USEPA IO 3.4	
Carbon Monoxide as CO	µg/m ³	2000	0.187	0.251	0.306	0.259	0.242	0.274	0.295	0.321	0.238	IS 5182 (PART-10) RA 2019	
Ozone as O ₃	µg/m ³	100	4.1	3.1	4.8	2.8	3.6	4.6	3.4	2.3	3.2	IS 5182 (PART-9) 2019	

Ø PM_{2.5}, PM₁₀, SO₂, NO₂ and NH₃ is monitored on 24 hrs. Basis & CO, O₃ is monitored on 8 hrs basis.

Ø C₆H₆, B (a) P & Heavy Metals (As, Ni, Pb) is monitored on 24 hrs basis.



Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/20775/009
	Issue Date:	2026-01-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

AMBIENT AIR QUALITY MONITORING AT NEW TOWNSHIP PROJECT (BALCO)

Analysis starting date :- 2025-12-05

Analysis Completion date :- 2026-01-04

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 TOWNSHIP PROJECT										Method
			2025-12-04	2025-12-06	2025-12-10	2025-12-12	2025-12-16	2025-12-18	2025-12-22	2025-12-24	2025-12-28		
Sulphur Dioxide as SO ₂	µg/m ³	80	20.8	19.8	16.7	18.5	18.9	16.9	29.2	31.6	24.1	IS 5182 (PART-2) RA 2017	
Oxides of Nitrogen as NO ₂	µg/m ³	80	12.8	16.3	13.7	10.1	11.4	10.9	11.6	9.7	11.0	IS 5182 (PART-6) RA 2017	
Particulate Matter (PM10)	µg/m ³	100	68.6	57.3	54.8	57.1	65.7	59.2	60.9	53.7	56.1	IS 5182 (PART-23) RA 2017	
Particulate Matter (PM2.5)	µg/m ³	60	28.3	23.1	22.0	23.9	27.2	24.7	25.5	20.6	23.1	IS 5182 (PART-24) 2019	
Ammonia as NH ₃	µg/m ³	400	1.0	0.7	1.3	0.9	1.1	0.5	0.8	0.6	0.5	APHA 3rd Edition - 401	
Benzene as C ₆ H ₆	µg/m ³	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	IS 5182 (PART-11) RA 2017	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	IS 5182 (PART-12) RA 2019	
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	USEPA IO 3.4	
Nickel as Ni	ng/m ³	20	4.8	6.3	5.1	5.4	6.6	3.8	4.4	5.3	5.7	USEPA IO 3.4	
Lead as Pb	µg/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	USEPA IO 3.4	
Carbon Monoxide as CO	µg/m ³	2000	218	163	148	169	181	153	119	135	171	IS 5182 (PART-10) RA 2019	
Ozone as O ₃	µg/m ³	100	3.5	2.2	2.8	3.7	1.7	2.3	3.4	2.2	1.5	IS 5182 (PART-9) RA 2019	

Ø PM2.5, PM10, SO₂, NO₂ and NH₃ is monitored on 24 hrs. Basis & CO, O₃ is monitored on 8 hrs basis.

Ø C₆H₆, B (a) P & Heavy Metals (As, Ni, Pb) is monitored on 24 hrs basis.



Plot No. 5, Life Sciences Facility, Neovantage Science & Technology Park Private Limited, Shamirpet, Genome Valley, Turkapally Medchal-Malkajgiri, Hyderabad-500 101, Telangana, India. T : +91 40 6740 4040 E : mdoffice@vimta.com URL : www.vimta.com

CIN : L24110TG1990PLC011977

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/23223/009
	Issue Date:	2026-02-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

AMBIENT AIR QUALITY MONITORING AT NEW TOWNSHIP PROJECT (BALCO)

Analysis starting date :- 2026-01-05

Analysis Completion date :- 2026-02-05

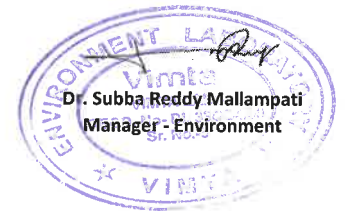
Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM10), Particulate Matter (PM2.5), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW TOWNSHIP PROJECT										Method
			2026-01-02	2026-01-08	2026-01-10	2026-01-14	2026-10-16	2026-01-20	2026-01-22	2026-01-26	2026-01-28		
Sulphur Dioxide as SO ₂	µg/m ³	80	18.9	13.9	15.1	20.0	19.8	21.9	25.5	26.0	21.2	IS 5182 (PART-2) RA 2017	
Oxides of Nitrogen as NO ₂	µg/m ³	80	9.8	10.4	9.3	10.8	11.0	17.0	14.6	13.7	16.1	IS 5182 (PART-6) RA 2017	
Particulate Matter (PM10)	µg/m ³	100	64.2	61.9	58.8	60.2	52.7	64.3	57.9	64.6	54.2	IS 5182 (PART-23) RA 2017	
Particulate Matter (PM2.5)	µg/m ³	60	25.4	23.8	21.7	24.7	18.2	26.8	22.7	27.5	20.9	IS 5182 (PART-24) 2019	
Ammonia as NH ₃	µg/m ³	400	0.6	0.5	0.8	0.8	0.9	0.9	1.2	1.0	0.7	APHA 3rd Edition - 401	
Benzene as C ₆ H ₆	µg/m ³	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	IS 5182 (PART-11) RA 2017	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	IS 5182 (PART-12) RA 2019	
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	USEPA IO 3.4	
Nickel as Ni	ng/m ³	20	4.8	4.2	5.6	4.9	5.2	3.7	4.4	4.1	3.7	USEPA IO 3.4	
Lead as Pb	µg/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	USEPA IO 3.4	
Carbon Monoxide as CO	µg/m ³	2000	73	148	117	104	132	159	126	142	163	IS 5182 (PART-10) RA 2019	
Ozone as O ₃	µg/m ³	100	2.2	1.2	1.7	0.8	1.2	5.2	4.5	2.7	4.2	IS 5182 (PART-9) RA 2019	

Ø PM2.5, PM10, SO₂, NO₂ and NH₃ is monitored on 24 hrs. Basis & CO, O₃ is monitored on 8 hrs basis.

Ø C₆H₆, B (a) P & Heavy Metals (As, Ni, Pb) is monitored on 24 hrs basis.



Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/24935/009
	Issue Date:	2026-03-05
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

AMBIENT AIR QUALITY MONITORING AT NEW TOWNSHIP PROJECT (BALCO)

Analysis starting date :- 2026-02-06

Analysis Completion date :- 2026-03-04

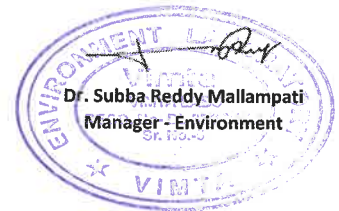
Tests required: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO_x), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), Ammonia (NH₃), Benzene (C₆H₆), Benzo (a) Pyrene in particulate phase, Heavy metals in particulate phase for Arsenic, Nickel & Lead.

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW TOWNSHIP PROJECT								Method
			2026-02-05	2026-02-07	2026-02-11	2026-02-13	2026-02-17	2026-02-19	2026-02-23	2026-02-25	
Sampling Date											
Sulphur Dioxide as SO ₂	µg/m ³	80	25.6	31.9	35.1	36.6	26.2	28.7	24.3	27.8	IS 5182 (PART-2) RA 2017
Oxides of Nitrogen as NO ₂	µg/m ³	80	16.4	12.7	11.3	19.6	22.0	20.3	10.9	10.3	IS 5182 (PART-6) RA 2017
Particulate Matter (PM ₁₀)	µg/m ³	100	65.0	61.8	54.9	60.7	53.6	56.8	63.3	58.2	IS 5182 (PART-23) RA 2017
Particulate Matter (PM _{2.5})	µg/m ³	60	27.3	24.8	21.7	24.2	20.2	22.8	25.1	23.4	IS 5182 (PART-24) 2019
Ammonia as NH ₃	µg/m ³	400	0.9	0.7	0.5	1.3	0.7	0.9	1.1	0.9	APHA 3rd Edition - 401
Benzene as C ₆ H ₆	µg/m ³	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	IS 5182 (PART-11) RA 2017
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	IS 5182 (PART-12) RA 2019
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	USEPA IO 3.4
Nickel as Ni	ng/m ³	20	5.3	6.7	6.1	4.9	5.6	6.4	4.7	5.6	USEPA IO 3.4
Lead as Pb	µg/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	USEPA IO 3.4
Carbon Monoxide as CO	µg/m ³	2000	182	207	136	151	168	195	252	174	IS 5182 (PART-10) RA 2019
Ozone as O ₃	µg/m ³	100	4.3	4.6	3.4	2.1	4.7	2.2	2.0	2.7	IS 5182 (PART-9) RA 2019

Ø PM_{2.5}, PM₁₀, SO₂, NO₂ and NH₃ is monitored on 24 hrs. Basis & CO, O₃ is monitored on 8 hrs basis.

Ø C₆H₆, B (a) P & Heavy Metals (As, Ni, Pb) is monitored on 24 hrs basis.



ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)	Report No.:	VLL/VLS/25-26/28724/009
	Issue Date:	2026-04-04
	P.O.No:	3402001553
	P.O. Date:	2025-10-01

AMBIENT AIR QUALITY MONITORING AT NEW TOWNSHIP PROJECT (BALCO)

Analysis starting date :- 2026-03-06

Analysis Completion date :- 2026-04-03

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 : NEW TOWNSHIP PROJECT								Method
			2026-03-05	2026-03-07	2026-03-11	2026-03-13	2026-03-17	2026-03-19	2026-03-25	2026-03-27	
Sampling Date											
Sulphur Dioxide as SO ₂	µg/m ³	80	15.9	17.6	34.5	38.1	32.9	25.7	29.5	26.2	IS 5182 (PART-2) RA 2017
Oxides of Nitrogen as NO ₂	µg/m ³	80	25.0	18.8	23.6	33.5	18.8	20.6	17.0	14.8	IS 5182 (PART-6) RA 2017
Particulate Matter (PM10)	µg/m ³	100	56.6	64.2	58.5	67.4	63.1	66.7	72.5	69.8	IS 5182 (PART-23) RA 2017
Particulate Matter (PM2.5)	µg/m ³	60	23.6	27.2	24.8	30.2	25.4	28.1	32.7	29.6	IS 5182 (PART-24) 2019
Ammonia as NH ₃	µg/m ³	400	3.0	2.2	1.4	4.7	1.6	0.9	2.3	1.8	APHA 3rd Edition - 401
Benzene as C ₆ H ₆	µg/m ³	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	IS 5182 (PART-11) RA 2017
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	IS 5182 (PART-12) RA 2019
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	USEPA IO 3.4
Nickel as Ni	ng/m ³	20	4.8	7.3	6.9	7.1	5.4	6.9	6.2	5.8	USEPA IO 3.4
Lead as Pb	µg/m ³	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	USEPA IO 3.4
Carbon Monoxide as CO	µg/m ³	2000	176	148	232	194	157	209	163	182	IS 5182 (PART-10) RA 2019
Ozone as O ₃	µg/m ³	100	11.5	8.2	12.9	15.6	11.7	7.2	7.3	6.3	IS 5182 (PART-9) RA 2019

Ø PM2.5, PM10, SO₂, NO₂ and NH₃ is monitored on 24 hrs. Basis & CO, O₃ is monitored on 8 hrs basis.

Ø C₆H₆, B (a) P & Heavy Metals (As, Ni, Pb) is monitored on 24 hrs basis.



Dr. Subba Reddy Mallampati
Manager - Environment



CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
PARYAVAS BHAWAN, NORTH BLOCK, SECTOR -19,
NAVA RAIPUR ATAL NAGAR, RAIPUR (C.G.)
492002

E-mail : hocecb@gmail.com, Ph. No. 0771-2512220

No. 13438 /HSMD/HO/CECB/2026

Nava Raipur, Date 11/03/2026

To,

M/s Bharat Aluminium Company Limited,
P.O.- Balco Nagar,
District - Korba (C.G.)

Sub:- Grant of amendment in existing authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

- Ref:-
1. Grant of amendment in existing authorization letter no. 5394 /HSMD /HO/CECB /2025 Raipur, Date 07/08/2025.
 2. Your Online application no. 20951030 dated 01/12/2025 & Subsequent Correspondence ending dated 15/01/2026.

---00---

Chhattisgarh Environment Conservation Board had granted of amendment in authorization and subsequent renewal of authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 vide letter no. 5394 /HSMD /HO/CECB/2025 Raipur, Date 07/08/2025 for following hazardous wastes, category and quantity subject to fulfillment of the terms and conditions mentioned therein. :-

Sl.No.	Hazardous Waste	Cat. No.	Quantity/Year
1.	Used or Spent oil	(Schedule I Cat. No. 5.1)	300 MT/Year
2.	Waste or residue containing oil	(Schedule I Cat. No.5.2)	7 MT/Year
3.	Cathode residues including Pot Lining waste	(Schedule I Cat. No.11.2)	12000 T/Year 42000 MT/Year
4.	Chemical sludge from waste water treatment	(Schedule I Cat. No. 35.3)	20MT/Year
5.	Rejected filter bags (FTP)	(Schedule-I, Cat.no. 33.1)	50 MT/Year
6.	Flammable chemical waste lab	(Schedule-II, Class-C-I)	0.4 KL/Year
7.	Used anode butts	(Schedule - I, Cat. No. - 11.6)	1,00,000 MT/ Year.
8.	Drosses and waste from treatment of salt sludge	(Schedule - I, Cat. No. - 11.5)	10,000 MT/ Year
9.	Flue gas dust and other particulates	(Schedule - I, Cat. No. - 11.4)	5,000 MT/ Year
10.	Spent Ion exchange resin containing toxic metals	(Schedule - I, Cat. No. - 35.2)	60 MT in 05 Years i.e. within authorization period
11.	Glasswool	(Schedule - II, C-4)	150 MT/Year
12.	Discarded asbestos	(Schedule - I, Cat. No. - 15.2)	100 MT/ Year

13.	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes	(Schedule - I, Cat. No. - 33.1)	300 MT/Year
14.	Oil and grease skimming	(Schedule - I, Cat. No. - 35.4)	1 KL/ Year

Industry, vide their online application no. 20951030 dated 01/12/2025 & Subsequent Correspondence ending dated 15/01/2026 has requested for an amendment in existing authorization with respect to hazardous wastes corresponding quantities mentioned therein. Based on the inspection report from R.O. Korba and after considering the application, facts and materials in records the board has decided to issue amendment in existing authorization with respect to hazardous waste and their corresponding quantities mentioned below:

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilization or co-processing etc.	Quantity (Tonnes/Annum)
1.	Used or Spent oil (Schedule - I, Cat. No. 5.1)	Sale to authorized recyclers	300 MT/Year
2.	Waste or residue containing oil (Schedule - I, Cat. No. 5.2)	Captive Incineration in cast house furnaces/ Sale to authorized recyclers	7 MT/Year
3.	Cathode residues including Pot Lining wastes (Schedule - I, Cat. No. 11.2)	(i) Disposal through captive SLF/ Sale to authorized reprocessor for detoxification/ Co-processing in cement plant/other residues of cathode will be sale to authorized recyclers/re-processor/Coprocessing in Cement Plant/SLF/TSDF	12000 T/Year
		(ii) Utilization of Spent Pot Lining (SPL) stored in Captive Secured Land Fill (SLF) and Sale to authorized re-processor for detoxification/ Co-processing in Cement Plant/TSDF	42000 MT/Year
4.	Chemical sludge from waste water treatment (Schedule - I, Cat. No. 35.3)	Disposal through captive SLF/ co-processing in cement plant/TSDF	20 MT/Year
5.	Rejected filter bags (FTP) Captive Incineration in pots 50 MT/Year (Schedule-I, Cat. no. 33.1)	Captive Incineration in pots	50 MT/Year
6.	Flammable chemical waste lab (Schedule-II, Class-C-I)	Sale to authorized recycler/ captive incineration in cast house furnaces/ Captive incineration in power plant boilers /distillation and reuse	0.4 KL/Year
7.	Used anode butts (Schedule - I, Cat. No. - 11.6),	Recycle and reuse in green anode plant for anode making/ captive SLF/ Sale to authorized recycler	1,00,000 MT/ Year.
8.	Drosses and waste from treatment of salt sludge (Schedule - I, Cat. No. - 11.5)	Metal recovery in cast house/sale to authorized utilizers/Disposal of residues to authorized utilizers	10,000 MT/ Year
9.	Flue gas dust and other particulates (Schedule - I, Cat. No. - 11.4)	Reuse in GAP for anode making/ disposal in captive SLF/ Sale to authorized utilizers/ TSDF	5,000 MT/ Year
10.	Spent Ion exchange resin containing toxic metals (Schedule - I, Cat. No. 35.2)	Utilization for energy recovery in boiler for steam or power generation as per SOP issued by CPCB	60 MT in 05 Years i.e. within authorization Period
11.	Glasswool (Schedule - II, C-4)	Dispose of in captive SLF/ TSDF	150 MT/Year
12.	Discarded asbestos (Schedule - I, Cat. No. - 15.2)	Sale to authorized recyclers/ disposal in captive SLF/TSDF	200 MT/ Year
13.	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes	Sale to authorized recyclers	300 MT/Year

	(Schedule - I, Cat. No. - 33.1)		
14.	Oil and grease skimming (Schedule - I, Cat. No. - 35.4)	Dispose of in captive SLF/ Sale to authorized recyclers	1 KL/Year

The amendment in authorization shall be valid for the period **upto 23/10/2026**. The details of authorization along with terms & conditions are given as per below:

FORM 2
[See rule 6 (2)]

GRANT OF AMENDMENT IN EXISTING AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

1. Number of authorization **789/HO/HSMD/CECB/NAVA RAIPUR ATAL NAGAR, RAIPUR**
2. Reference of Online application no. **20951030 dated 01/12/2025 & Subsequent Correspondence ending dated 15/01/2026.**
3. The operator of facility i.e. occupier **M/s Bharat Aluminium Company Limited, P.O.- Balco Nagar, District - Korba (C.G.)** is hereby granted an amendment in existing authorization based on the signed inspection report from RO for generation, collection, storage, reuse, recycling and disposal of hazardous wastes in the premises situated at **P.O.- Balco Nagar, District - Korba (C.G.)**.

Detail of Authorization

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilization or co-processing etc.	Quantity (Tonnes/Annum)
1.	Used or Spent oil (Schedule - I, Cat. No. 5.1)	Sale to authorized recyclers	300 MT/Year
2.	Waste or residue containing oil (Schedule - I, Cat. No. 5.2)	Captive Incineration in cast house furnaces/ Sale to authorized recyclers	7 MT/Year
3.	Cathode residues including Pot Lining wastes (Schedule - I, Cat. No. 11.2)	(i) Disposal through captive SLF/ Sale to authorized reprocessor for detoxification/ Co-processing in cement plant/other residues of cathode will be sale to authorized recyclers/re-processor/Coprocessing in Cement Plant/SLF/TSDF	12000 T/Year
		(ii) Utilization of Spent Pot Lining (SPL) stored in Captive Secured Land Fill (SLF) and Sale to authorized re-processor for detoxification/ Co-processing in Cement Plant/TSDF	42000 MT/Year
4.	Chemical sludge from waste water treatment (Schedule - I, Cat. No. 35.3)	Disposal through captive SLF/ co-processing in cement plant/TSDF	20MT/Year
5.	Rejected filter bags (FTP) Captive Incineration in pots 50 MT/Year (Schedule-I, Cat. no. 33.1)	Captive Incineration in pots	50 MT/Year
6.	Flammable chemical waste lab (Schedule-II, Class-C-I)	Sale to authorized recycler/ captive incineration in cast house furnaces/ Captive incineration in power plant boilers /distillation and reuse	0.4 KL/Year
7.	Used anode butts (Schedule - I, Cat. No. - 11.6),	Recycle and reuse in green anode plant for anode making/	1,00,000 MT/ Year.

		captive SLF/ Sale to authorized recycler	
8.	Drosses and waste from treatment of salt sludge (Schedule - I, Cat. No. - 11.5)	Metal recovery in cast house/sale to authorized utilizers/Disposal of residues to authorized utilizers	10,000 MT/ Year
9.	Flue gas dust and other particulates (Schedule - I, Cat. No. - 11.4)	Reuse in GAP for anode making/ disposal in captive SLF/ Sale to authorized utilizers/ TSDf	5,000 MT/ Year
10.	Spent Ion exchange resin containing toxic metals (Schedule - I, Cat. No. 35.2)	Utilization for energy recovery in boiler for steam or power generation as per SOP issued by CPCB	60 MT in 05 Years i.e. within authorization Period
11.	Glasswool (Schedule - II, C-4)	Dispose of in captive SLF/ TSDf	150 MT/Year
12.	Discarded asbestos (Schedule - I, Cat. No. - 15.2)	Sale to authorized recyclers/ disposal in captive SLF/ TSDf	200 MT/ Year
13.	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Schedule - I, Cat. No. - 33.1)	Sale to authorized recyclers	300 MT/Year
14.	Oil and grease skimming (Schedule - I, Cat. No. - 35.4)	Dispose of in captive SLF/ Sale to authorized recyclers	1 KL/Year

(1) The authorization shall be valid for the period upto **23/10/2026**.

(2) The authorization is subject to the following conditions:

TERMS & CONDITIONS OF AUTHORIZATION

1. The authorization shall comply with the provisions of Environment (protection) Act, 1986 and the rules made there-under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Chhattisgarh Environment Conservation Board.
3. The person authorized shall not rent, lend, sell transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Chhattisgarh Environment Conservation Board.
4. **Industry shall have to register in EPR portal of CPCB, Delhi as per Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 as amended if it comes under the categories of used oil producer, importer, recyclers/utilizers and collection agent.**
5. **Industry shall ensure to submit the agreement for disposal of their generated hazardous waste in TSDf of M/s Kesda Waste Management Private Limited, Village – Kesda, Tehsil – Simga, District – Balodabazar-Bhatapara (C.G.)**
6. Any unauthorized change in personnel, equipment, or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
7. The person authorized shall implement Emergency Response Procedure (ERP) which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
8. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”.
9. It is the duty of the authorized person to take prior permission of the Chhattisgarh Environment Conservation Board to close down the facility.
10. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.

11. Industry shall prepare emergency response plan (ERP) and ensure implementation of the same at the time of any accident occurs during handling and transportation of hazardous waste as per CPCB guidelines.
12. The hazardous and other waste, generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed off as per standard operating procedures/guidelines issued by CPCB from time to time.
13. An application for the renewal of an authorization shall be made three months before the expiry of authorization as laid down in the Rules.
14. Annual return in form IV shall be filed by June 30th for the period ending 31st March of the last financial year.
15. The wastes shall be collected and stored properly with adequate safety measures as per rule.
16. Authorized person shall comply with the provisions of rule 17, 18 and 19 for packing, labeling and transport of Hazardous Waste.
17. The authorized person should maintain the record of Hazardous Waste as per Form-3 of Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
18. The occupier shall follow the guidelines (if any) issued by Central Pollution Control Board or MoEF & CC for management of Hazardous waste from time to time.
19. The industry shall display data outside factory gate, about on quantity and nature of hazardous chemicals and wastes being used in the plant, water quality and air emissions and solid wastes generated within the factory premises. The display board shall be made and placed as per CPCB guidelines.
20. At a time only one type/ Category of Hazardous waste shall be co-processed in the cement kiln. A log book of the waste co-process shall be maintained including emission monitoring result during co-processing.
21. Industry shall ensure that the transportation of hazardous wastes should be carried out through GPS enable dedicated vehicles of authorized transporters only.
22. Industry shall create new website for Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 and upload all the information above the waste in the website.
23. Before the wastes given for thermal/biological/physico-chemical treatment; should be completely dewatered, detoxified, and proper conditioned and any possible recovery is made before their disposal.
24. The industry should constitute a hazardous waste management cell to take care of the management aspect to the hazardous waste generated in the plant.
25. An on-site storage of the hazardous wastes for a maximum period of 90 days should be provided and it shall be ensured that there is no leakage or seepage from the surrounding walls or bottom. The site should be covered and properly protected to prevent the entry of rain water in storage area.
26. At least four nos. of piezometric points should be provided around the storage site of H.W. to monitor the leaching of the waste and the monitoring report of the same shall be submitted to the board every six monthly. Each type of waste shall be stored in a separate storage cell.
27. The discarded containers of Hazardous waste and chemical shall not be used for storage of food grade products. At the storage site "Hazardous waste storage site & danger signboard" shall be provided with all safety devices.
28. In the case of any accident due to handling of hazardous waste the authorized person must inform immediately to the Concerned Regional Office and H.O., Atal Nagar, Raipur of the Board by fax/telephone or by E-mail about the incident and details report be sent in form no. 11 [see rule 22].

29. The authorization obtained by the Chhattisgarh Environment Conservation Board should be prominently displayed.
30. Used batteries shall be disposed of as per the Batteries (Management & Handling) Rules, 2001.
31. Board reserves the right to cancel/amend the above condition and add new conditions as and when deemed necessary.

Member Secretary

C.G. Environment Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)

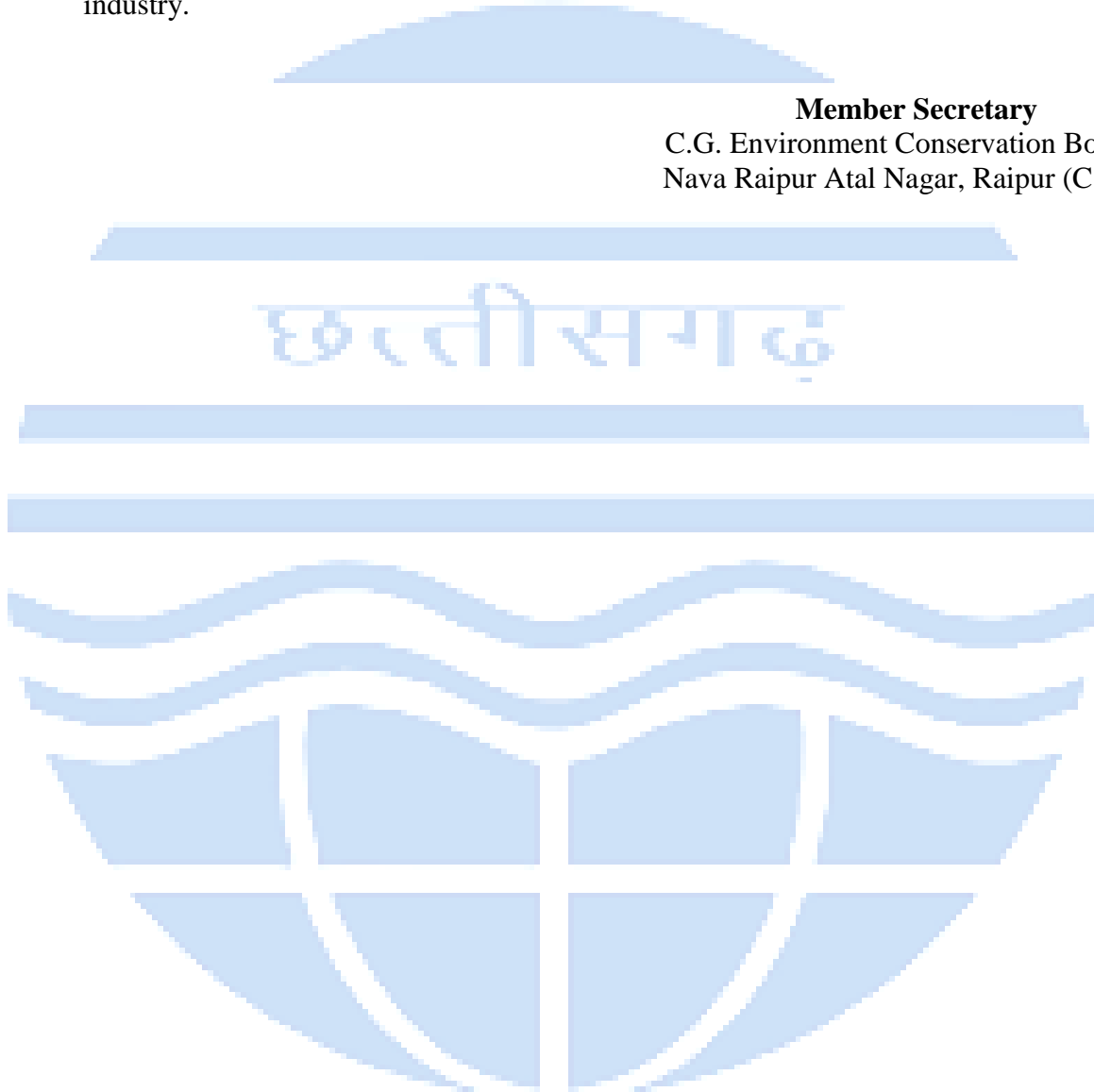
Endt. No. 13439/H.O./HSMD/CECB/2026

Nava Raipur, Date 11/03/2026

Copy to :- Regional Officer, Regional office, Chhattisgarh Environment Conservation Board, Korba (C.G.) please ensure compliance and report, if any condition/conditions are violated by the industry.

Member Secretary

C.G. Environment Conservation Board
Nava Raipur Atal Nagar, Raipur (C.G.)



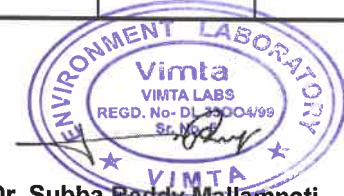
Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



Driven by Quality. Inspired by Science.

ISSUED TO M/s. Bharat Aluminium Company Limited KORBA (C.G)				Report Number: VLL/VLS/25-26/15704/003 Issue Date: 2025-11-05 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)	2025-10-03	Norms in dB(Night)	2025-10-03
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	55.5	70	52.8
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	57.6	70	53.0
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	58.1	70	56.1
4	Control room GIS	dB	75	53.0	70	46.5
5	CRP room GIS	dB	75	60.9	70	53.8



Dr. Subba Reddy Mallampati
Manager - Environment

ISSUED TO				Report Number: VLL/VLS/25-26/18084/003		
M/s. Bharat Aluminium Company Limited				Issue Date: 2025-12-05		
KORBA (C.G)				P.O. No: 3402001553		
				P.O. Date: 2025-10-01		
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)	2025-11-03	Norms in dB(Night)	2025-11-03
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	55.9	70	53.4
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	58.7	70	53.4
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	59.8	70	54.6
4	Control room GIS	dB	75	52.6	70	46.4
5	CRP room GIS	dB	75	61.0	70	54.8


Dr. Subba Reddy Mallampati
Manager Environment

VIMTA LABS
Sr. No.-5
VIMTA

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



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ISSUED TO				Report Number: VLL/VLS/25-26/20775/003		
M/s. Bharat Aluminium Company Limited				Issue Date: 2026-01-05		
KORBA (C.G)				P.O. No: 3402001553		
				P.O. Date: 2025-10-01		
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)	2025-12-04	Norms in dB(Night)	2025-12-04
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	55.2	70	53.8
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	59.0	70	53.8
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	60.2	70	55.5
4	Control room GIS	dB	75	53.2	70	46.9
5	CRP room GIS	dB	75	61.7	70	55.7

Dr. Subba Reddy Mallampati
 Manager - Environment

Vimta Labs Limited

Registered Office
 142, IDA Phase II, Cherlapally
 Hyderabad-500 051, Telangana, India
 T : +91 40 2726 4141
 F : +91 40 2726 3657



ISSUED TO M/s. Bharat Aluminium Company Limited KORBA (C.G)				Report Number: VLL/VLS/25-26/23223/003 Issue Date: 2026-02-05 P.O. No: 3402001553 P.O. Date: 2025-10-01		
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)	2026-01-23	Norms in dB(Night)	2026-01-23
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	55.6	70	52.0
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	59.2	70	54.2
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	60.3	70	54.2
4	Control room GIS	dB	75	53.3	70	48.9
5	CRP room GIS	dB	75	61.5	70	55.3


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 Manager - Environment

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO M/s. Bharat Aluminium Company Limited KORBA (C.G)		Report Number: VLL/VLS/25-26/24935/003				
		Issue Date: 2026-03-05				
		P.O. No: 3402001553				
		P.O. Date: 2025-10-01				
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)	2026-02-02	Norms in dB(Night)	2026-02-02
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	59.9	70	52.2
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	59.0	70	54.6
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	61.5	70	53.0
4	Control room GIS	dB	75	53.9	70	47.3
5	CRP room GIS	dB	75	61.9	70	54.2


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Manager - Environment

Vimta Labs Limited

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Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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ISSUED TO M/s. Bharat Aluminium Company Limited KORBA (C.G)		Report Number: VLL/VLS/25-26/28724/003 Issue Date: 2026-04-04 P.O. No: 3402001553 P.O. Date: 2025-10-01				
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)	2026-03-05	Norms in dB(Night)	2026-03-05
				6:00 to 22.00		22.00 to 6.00
1	Rectifier Control room	dB	75	59.1	70	52.5
2	Process Control room First Floor (Nucleus Zone-1)	dB	75	58.8	70	53.8
3	Technical In charge room Second Floor (Nucleus Zone-1)	dB	75	62.0	70	52.8
4	Control room GIS	dB	75	53.5	70	47.2
5	CRP room GIS	dB	75	61.2	70	54.7

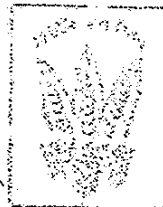

Dr. Subba Reddy Mallampati
Manager - Environment


Approximate = 2000
... Government seems to
... 15 per cent students who
... referred by the students belong-
... to the SC category, 7.5 per
... cent for the students from the
... ST category and 3 per cent for
... physically challenged Group of
... Students each in respect of the
... class VIII.

PUBLIC NOTICE

This is to inform the gen-
... eral public that Ministry of En-
... vironment and Forests
... (MOEF) Govt. of India has ac-
... corded Environmental Clear-
... ance for Aluminium Smelter
... expansion by 3.5 LTPA to 9.0
... LTPA and CPP of 300 MW at
... Korba of Bharat Aluminium
... Company Limited (BALCO). A
... copy of the clearance letter no.
... 3-115/1/123/2007 - IA-II(I)
... dated: 16 - 09 - 2008 is avail-
... able with Chhattisgarh Environ-
... ment Conservation Board and
... also at website of MOEF <http://www.moef.gov.in>

For: Bharat Aluminium
... Co. Ltd.
... Korba, Chhattisgarh.



भारत

जिला का

अवध

जयंत्यः 32

वर्ष

क्रमांक- सामान्य/36/2007-0

// जिविदा

भारतीय वायु निगम की त
... सामग्रियों एवं मुद्रित स्टेशनरी का

... वे सील व नमूने जिविदा आगमन की

... इच्छुक नमूने जिविदा कार्यालय

... सामग्रियों की सूची सितारक 04

... समय में 25/- (एकरोस रुपये)

... कायदा व आगमन कर अर्थात्

HITVADA

... में ... 2,816 ...
 ... 85 ...
 ... 80 लाख ...
 ... नियामक एवं विकास ...
 ... प्राधिकरण (इरडा) द्वारा साल्वेंसी ...
 ... और उद्योग के निवेश ...
 ... नियामक और कंटेनर किंग ...

सांघो का एलपीजी वैरिएंट पेश

... 3 सितंबर (ए) ...
 ... को ...
 ... सांघो का एलपीजी वैरिएंट पेश करने को आज ...
 ... की है जिसकी कीमत 3.54 लाख 64ए और 3.75 लाख ...
 ... रखी गई है।

आम सूचना

... को सूचित किया जाता है कि ...
 ... द्वारा भारत एल्यूमिनियम कम्पनी लिमिटेड ...
 ... स्क्वियर की क्षमता 2.5 लाख टन सालाना को बढ़ाकर ...
 ... और 300 मीगावॉट क्षमता के निजी ताप विद्युत ...
 ... के लिए पत्र साख्त नं- 11/11/2007/2007 - आईए-टी ...
 ... 2007 के जरिए ...
 ... जिसे टकतीसवां प्रभावक संरक्षण बोर्ड और ...
 ... <http://envi.nic.in> पर देखा जा सकता है।
 ...
 ...
 ...