

BALCO/ENV/A-02(A)/2025/498

Date: 18.10.2025

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

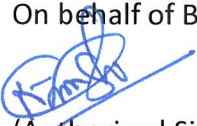
Sub: Half yearly compliance status (April 2025 to September 2025) of New Cold Rolling Mill.

Respected Sir,

Please find enclosed herewith the half yearly compliance report of the Environmental Clearance No. J - 11011/10/1994-IA II, dated 10.8.1994 for the New Cold Rolling Mill.

We hope that the above is in line with the requirements under the referred Environmental Clearance. In case you require any further information or clarification, we would be glad to furnish 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 Conservation Board, Korba.

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**Compliance Status of conditions stipulated in Environmental clearance in installation of
New Cold Rolling Mill and Modernization of Smelter
Duration: April 2025 to September 2025
MoEF No. 11011/10/94-IA II dated 10.8.1994**

S.No.	Consent conditions	Present status
1.	The Project Authorities must strictly adhere to the stipulations laid down by the State Pollution Control Board and the State Government.	The stipulations laid down by the State Pollution Control Board and the State Government are being followed.
2.	Any expansion of the plant either with the existing product mix or new products can be taken up only with the prior approval of this Ministry.	Any expansion of the plant is taken up only after obtaining approval of the Ministry.
3.	The gaseous emissions from various process units should conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission level should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restored until the control measures are rectified to achieve the desired efficiency.	Emissions from various processes are within the stipulated standards. Regular monitoring is being carried out to estimate the efficiency of the pollution control equipment; any deviation from the design is being rectified immediately. In case of failure of the control equipment the corresponding process unit is stopped till such time the control equipment is brought in line.
4.	Adequate number of ambient air quality monitoring station should be set up in the down wind direction as well as where maximum ground level concentrations are anticipated in consultation with the State Pollution Control Board. Monitoring network should be designed taking into account land use pattern, location of the stacks, meteorological conditions and topographic features including existing ambient air quality data.	Adequate number of Ambient Air Quality monitoring stations have been fixed in up wind and down wind direction based on the meteorological conditions, stack locations, land use pattern in consultation with the State Pollution Control Board. Monitoring is being carried out as per the requirements laid down by MoEF&CC, CPCB & CECB. Please refer Annexure - I for monitoring results for the period of April 2025 to September 2025.
5.	All the stacks of the plant must be provided with Online automatic stack emission monitoring equipment. Stack emission and ambient air quality data must be submitted to the State Pollution Control Board once in 3 months and to this Ministry once in 6 months along with statistical analysis and interpretation.	Plant I Smelter has been dismantled for phasing out from VSS to PFPB technology. Online stack emission monitoring equipment provided in the new Smelter. Ambient air quality is being monitored, and data submitted monthly to Chhattisgarh Environment Conservation Board (CECB) and to Ministry once in 6 months.

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6.	Fugitive emissions of dust/mists, vapors, fumes etc. should be controlled and work environment monitored for prevailing contaminants regularly.	Fugitive emissions of dust/mists, vapors, fumes are controlled and the work environment is monitored.
7.	There should be no change in the stack design without prior approval of the State Pollution Control Board and this Ministry.	Any change in stack design will be done only with prior approval of the State Pollution Control Board.
8.	Adequate number of effluent monitoring stations must be set up in consultation with the State Pollution Control Board. If the effluent quality at any time exceeds the standards prescribed, the corresponding unit of the plant which are contributing to the excessive pollution load shall be immediately stopped from the operation till the quality of pollutant discharged from units are brought down to the required standards.	No water is required for industrial use in the New Cold Rolling Mill. There is no discharge from New Cold Rolling Mill & Smelter, hence, this clause is not applicable.
9.	The treated effluent should conform to the prescribed standards and should be utilized for Green Belt Development to the maximum extent possible.	No effluent is generated in the New Cold Rolling Mill.
10.	Water quality and quantity in Belgiri Nallah and Dengur Nallah during summer season along with flow data after discharge of effluent should also be monitored.	No effluent generation, thus zero discharge. The water quality of Belgiri and Dengur Nallah is being monitored regularly in all seasons. Please refer to Annexure II for the period of April 2025 to September 2025 water quality reports.
11.	Ash pond water should be recycled to the maximum extent possible. The ground water quality around the ash pond should also be regularly monitored especially for heavy metals.	Not Applicable as plant has rolling mill only and no ash generation from New Cold Rolling Mill.
12.	The Project Authorities should ensure that villages located around the plant within 10 km radius should have no pollution problem especially from fluoride because of the existing and proposed operations. Drinking water should be provided to all those villages where fluoride contamination has been taken place. Fluoride levels in drinking water should be within the WHO standards of 1.5 mg. per liter. Wherever necessary de-F Plant may be installed for giving drinking water free from fluoride.	We ensure that the villages around us have no complaints of pollution from our plant. We are periodically monitoring the drinking water sources of the villages for relevant parameters including Fluoride. The monitoring data does not indicate any contamination. All the sources have no contamination of fluoride. Ground water monitoring is undertaken once a month. Please refer Annexure II for the period of April 2025 to September 2025.

BOD

13.	Disposal sites of red mud, spent cathodes should be made impervious to avoid ground water contamination. These sites should have approval of State Pollution Control Board. Adequate monitoring of the impoundment sites (soil, surface and ground water) should be carried out regularly and record maintained.	No red mud is generated as the Alumina plant is not in operation since 2009. Spent cathodes are not generated from NCRM.
14.	Spent cathodes should be enclosed in reinforced cement concrete vaults/container before disposal. Recovery of carbon and fluoride from the spent cathodes lining should be attempted by Balco to minimize ground water pollution.	Spent cathodes are not generated from NCRM.
15.	Proper earth cover should be provided for red mud ponds, which are completely filled up and are of no use. Embankment should be provided around the ponds to prevent surface run-off. Balco should also explore the possibility of recovery of TiO_2 , Fe_2O_3 , and Al_2O_3 from red mud. The Balco should also explore the possibility of supplying red mud to the cement industries in the nearby area for production of ferrite cement so as to utilize the same to the maximum extent possible.	Operation of alumina plant has been stopped since 2009 as such this condition is not applicable. However, the existing red mud ponds have been converted into ash dyke for disposal of fly ash generated from power plants as per approval granted in Environment Clearances received for BALCO Power plants. Embankment is also provided around the ponds to prevent surface run-off.
16.	The guidelines published by Ministry of Environment and Forests for management and handling of hazardous wastes in 1991 should be adopted by Balco while disposing the hazardous wastes generated.	The guidelines of MoEF&CC amended from time to time are being followed.
17.	Impact study (carrying capacity) to assess the assimilating and the supportive capacity of local environment should be carried out. The scope of the carrying capacity should be finalized in consultation with the State Pollution Control Board/Central Pollution Control Board and this Ministry.	M/s NEERI carried out a comprehensive environmental impact assessment study. Further, Impact study (carrying capacity) to assess the assimilating and the supportive capacity of local environment has been carried out by M/s Bhagwathi Ana Labs in consultation with CECB and report submitted to CECB.
18.	Inventorisation of pollution sources and loads in terms of liquid, gases and solid wastes should also be carried out and report submitted to the State Pollution Control Board and Ministry of Environment and Forests once in six months.	Six monthly reports are submitted to the State Pollution Control Board and Ministry of Environment and Forests. Last report was submitted vide: Letter No. BALCO/ENV/A-02(A)/2025/266 dated 23 th May 2025.

19.	Biological monitoring of flora must be started within the vicinity of the smelter plant and pollution. Isopleths should also be plotted based on the fluoride contents of certain species and plants.	We are carrying out monitoring of forage fluoride in vicinity of Smelter and submitting report to CECB and MOEF regularly. Please refer Annexure-III for the period of April 2025 to September 2025.
20.	Cyanide and fluoride levels in the ground water around Balco complex should be monitored on a regular basis and report submitted to this Ministry every 6 months.	Ground water quality in and around BALCO is being monitored periodically for relevant parameters and the report submitted regularly. Please refer Annexure-II for the period of April 2025 to September 2025.
21.	Performance evaluation report on the existing pollution control systems at Balco should be furnished to this Ministry within 3 months.	Complied with.
22.	Environmental Audit Report for the year 1993-94 should also be submitted.	Environment Statement is submitted every year to the CECB. The Environment Statement for 2025-26 was submitted on 26 th September 2025 vide our letter No. BALCO/ENVT/A-01/2025/ 454.
23.	In addition to the above all recommendations made in the Environmental Management Plan based on the rapid EIA study should be implemented.	Environmental Management Plan is being implemented.
24.	A time bound action plan to implement the conditions stipulated by the Ministry as well as the recommendations of the consultants should be submitted within a period of 3 months.	Complied with.
25.	The Project authorities must set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel who will directly report to the Chief Executive.	We have a NABL accredited laboratory facility for collection and analysis of environmental samples under the supervision of competent technical personnel.
26.	A separate Environmental Management Cell with suitable qualified people to carry out various functions should be set up under the control of senior executive who will report directly to the Head of Organization.	A full-fledged Environment Management Cell is in place and is headed by a senior executive directly reporting to the Head of Organization.
27.	The funds earmarked for the environmental protection measures should not be diverted for any other purpose and year wise expenditure should be reported to this Ministry.	Complied with.

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/25-26/02532/006
	Issue Date:	2025-05-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

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

TEST RESULTS

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



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



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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-04-05

Analysis Completion date :- 2025-05-05

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

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP									
Sampling Date			2025-04-03	2025-04-05	2025-04-09	2025-04-11	2025-04-15	2025-04-17	2025-04-21	2025-04-23	2025-04-27	Method
Sulphur Dioxide (SO ₂)	µg/m ³	80	31.0	36.4	26.3	34.9	26.1	24.6	22.1	27.8	28.4	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	12.1	16.1	13.6	18.0	17.0	14.4	13.8	15.1	18.3	Modified Jacob & Hochheiser Method
Particulate Matter (PM10)	µg/m ³	100	63.7	59.3	56.6	52.8	61.4	57.5	65.8	60.1	54.6	Gravimetric Method
Particulate Matter (PM2.5)	µg/m ³	60	22.8	19.4	17.0	15.7	20.6	17.4	24.1	21.9	18.5	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	3.4	3.1	2.1	2.4	2.7	2.0	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	3.4	5.2	2.8	4.6	3.1	4.4	3.8	4.3	2.8	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	317	269	384	412	363	402	286	328	287	NDIR Spectroscopy Method
Ozone	µg/m ³	100	6.2	5.3	7.3	5.1	8.1	6.4	4.7	5.8	4.4	UV photometric method



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



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

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

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

TEST RESULTS

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



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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-05-03

Analysis Completion date :- 2025-06-03

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

TEST RESULTS

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



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/25-26/06982/006
	Issue Date:	2025-07-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

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

TEST RESULTS

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



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

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

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

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

TEST RESULTS

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



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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-06-09

Analysis Completion date :- 2025-07-04

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

TEST RESULTS

Parameters	Units	Limits	AAQ Location : NEW ETP								Method
			2025-06-05	2025-06-07	2025-06-11	2025-06-13	2025-06-17	2025-06-19	2025-06-23	2025-06-25	
Sampling Date											
Sulphur Dioxide (SO ₂)	µg/m ³	80	23.6	21.0	33.4	24.8	30.5	37.8	30.2	34.3	Improved West and Gaeke Method
Nitrogen Dioxide (NO _x)	µg/m ³	80	13.2	14.5	16.6	12.9	17.6	19.9	21.6	16.2	Modified Jacob & Hochheiser Method
Particulate Matter (PM ₁₀)	µg/m ³	100	68.8	53.2	55.2	61.5	52.6	53.5	53.1	54.8	Gravimetric Method
Particulate Matter (PM _{2.5})	µg/m ³	60	26.2	20.5	24.1	21.4	16.2	18.2	19.4	17.4	Gravimetric Method
Ammonia (NH ₃)	µg/m ³	400	2.6	2.8	1.7	2.4	1.8	2.3	2.6	1.7	Indophenol Blue Method
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method
Nickel as Ni	ng/m ³	20	4.6	5.1	3.8	5.8	6.3	4.8	4.4	6.5	AAS/ICP Method
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method
Carbon Monoxide	µg/m ³	2000	276	321	347	263	315	307	296	229	NDIR Spectroscopy Method
Ozone	µg/m ³	100	4.3	3.9	3.3	5.1	6.2	4.9	4.4	3.2	UV photometric method



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

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

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

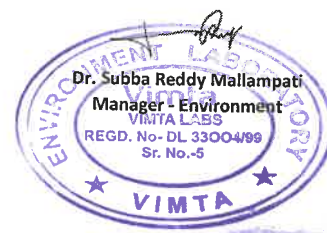
TEST RESULTS

AAQ Location : COAL GATE

Parameters	Units	Limits											
Sampling Date			2025-07-03	2025-07-05	2025-07-09	2025-07-11	2025-07-15	2025-07-17	2025-07-21	2025-07-23	2025-07-28	Method	
Sulphur Dioxide (SO ₂)	µg/m ³	80	39.8	33.9	46.0	45.9	37.5	29.4	41.6	28.5	36.9	Improved West and Gaeke Method	
Nitrogen Dioxide (NO _x)	µg/m ³	80	21.7	23.5	20.1	17.4	10.0	12.5	8.7	11.3	11.2	Modified Jacob & Hochheiser Method	
Particulate Matter (PM ₁₀)	µg/m ³	100	46.6	45.8	54.3	42.1	53.6	54.7	50.7	54.8	50.6	Gravimetric Method	
Particulate Matter (PM _{2.5})	µg/m ³	60	21.2	17.7	26.9	21.6	24.8	18.3	22.7	16.4	13.2	Gravimetric Method	
Ammonia (NH ₃)	µg/m ³	400	2.2	2.6	2.4	3.9	1.4	1.5	1.1	1.7	2.0	Indophenol Blue Method	
Benzene (C ₆ H ₆)	µg/m ³	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Benzo(a) Pyrene in particulate phase	ng/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	Solvent Extraction followed by GC Analysis	
Arsenic as As	ng/m ³	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	AAS/ICP Method	
Nickel as Ni	ng/m ³	20	6.4	4.8	4.4	5.9	6.1	5.8	5.3	6.6	4.7	AAS/ICP Method	
Lead as Pb	µg/m ³	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	AAS/ICP Method	
Carbon Monoxide	µg/m ³	2000	291	377	405	258	384	358	264	248	396	NDIR Spectroscopy Method	
Ozone	µg/m ³	100	6.0	5.7	11.1	10.7	2.5	5.2	6.2	6.5	4.0	UV photometric method	



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



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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-07-05

Analysis Completion date :- 2025-08-04

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

TEST RESULTS

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



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

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

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

TEST RESULTS

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



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

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

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

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

TEST RESULTS

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



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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-08-03

Analysis Completion date :- 2025-09-04

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

TEST RESULTS

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



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

AMBIENT AIR QUALITY MONITORING AT COAL GATE (BALCO)

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

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

TEST RESULTS

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



Sensitivity: Internal (C3)

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

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

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

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

TEST RESULTS

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



Sensitivity: Internal (C3)

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

AMBIENT AIR QUALITY MONITORING AT NEW ETP (BALCO)

Analysis starting date :- 2025-09-05

Analysis Completion date :- 2025-10-03

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

TEST RESULTS

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



Sensitivity: Internal (C3)

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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 Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT) -

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(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/25-26/02532/001
Issued Date : 2025-05-05
P.O. No. : 8500005780
P.O. Date : 2022-06-29**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



**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:**

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BALCO
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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:**

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



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

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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



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Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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



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

SURFACE WATER SAMPLE (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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 Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory

VIMTA LABS
REGD. No. DL 33004/99
Sr. No. 5
VIMTA
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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

VIMTA LABS
REGD. No- DL 33004/99
Sr. No.-11
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 : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory

VIMTA LABS
REGD. No- DL/3004/99
Sr. No. 1
VIMTA
Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
Hyderabad - 500 101, Telangana, India. T : +91 40 6740 4040 E : mdooffice@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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

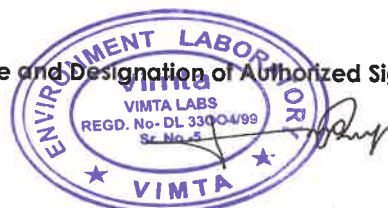
Sample Registration Date : 2025-05-12 Sampling Date : 2025-05-07
Analysis Starting Date : 2025-05-12 Analysis Completion Date : 2025-05-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
Hyderabad - 500 101, Telangana, India. T : +91 40 6740 4040 E : mdooffice@vimta.com URL : www.vimta.com

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
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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Chhattisgarh

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory

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

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

TEST REPORT

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

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

-END OF THE REPORTS-

Signature and Designation of Authorized Signatory

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:

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KORBA
Chhattisgarh

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

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager – Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
Hyderabad - 500 101, Telangana, India. T : +91 40 6740 4040 E : mdoffice@vimta.com URL : www.vimta.com

CIN : L24110TG1990PLC011977

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


VIMTA LABS
REGD. No. DL 3100456
Sr. No. 3
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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Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
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
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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Life Sciences Campus, # 5, Neovantage Science & Technology Park, Genome Valley, Shamirpet, Medchal-Malkajgiri District.
Hyderabad - 500 101, Telangana, India. T : +91 40 6740 4040 E : mdoffice@vimta.com URL : www.vimta.com

CIN : L24110TG1990PLC011977

ISSUED TO:

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

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P.O. Date : 2022-06-29

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

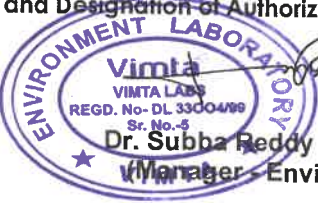
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory


VIMTA LABS
REGD. No- DL 3300498
Sr. No.-5
Dr. Subba Reddy Mallampati
(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 : 2025-06-10 Sampling Date : 2025-06-03
 Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-30
 Test Required : Water Analysis as per IS 10500 : 2012

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory



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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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

SAMPLE COLLECTED BY VIMTA LABS LTD.

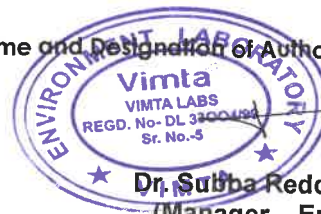
TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



Dr. Subha Reddy Mallampati
(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/25-26/06982/002
Issued Date : 2025-07-05
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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

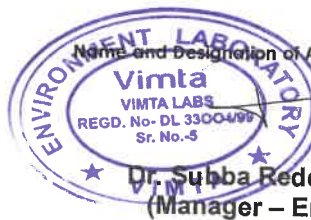
Sample Registration Date : 2025-06-10 Sampling Date : 2025-06-03
Analysis Starting Date : 2025-06-10 Analysis Completion Date : 2025-06-24
Samples Details : SW5- Hasdeo river near Ramgarh (U/S) SW6- Hasdeo river near Gerwaghat, SW7- Hasdeo river near kohariya, SW8- Hasdeo river near kobra(D/S)-1, SW9-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

TEST REPORT

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

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

- END OF THE REPORTS -

Signature and Designation of Authorized Signatory

REGD. No- DL 3300499
Sr. No.-5
Dr. Subba Reddy Mallampati
(Manager – Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

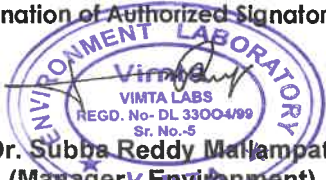
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager - Environment)



ISSUED TO:

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

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

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


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

ISSUED TO:

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

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

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

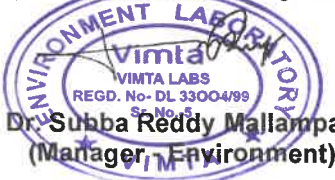
Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-25
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager, Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subha Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

Page 1 of 1

SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date : 2025-07-07 Sampling Date : 2025-07-01
Analysis Starting Date : 2025-07-07 Analysis Completion Date : 2025-07-22
Samples Details : SW1-Bailgiri Nala (U/S)-Near 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	-	7.14	7.18	7.22	7.18
2	Colour	Hazen	1	2	2	3
3	Conductivity	µS/cm	144	284	181	271
4	TDS	mg/l	89	176	93	166
5	DO	mg/l	7.1	6.5	6.9	7.1
6	BOD	mg/l	1.1	1.8	1.3	1.4
7	COD	mg/l	6	10	8	9
8	Turbidity	NTU	18.0	10.0	24.0	12.0
9	Total Hardness as CaCO ₃	mg/l	37	78	53	64
10	Total Alkalinity as CaCO ₃	mg/l	36	65	44	51
11	Calcium as Ca	mg/l	8.1	17	10.1	11
12	Magnesium as Mg	mg/l	4.2	7.8	6.4	7.2
13	Chlorides as Cl	mg/l	17.4	31.4	18.4	38.6
14	Residual free chlorine	mg/l	<0.2	<0.2	<0.2	<0.2
15	Phosphates as PO ₄	mg/l	0.02	0.04	0.03	0.02
16	Sulphates as SO ₄	mg/l	6.9	10.2	8.1	15.2
17	Fluorides as F	mg/l	0.254	0.384	0.318	0.342
18	Nitrates as NO ₃	mg/l	0.9	1.1	1.0	1.3
19	Sodium as Na	mg/l	12.3	25.3	10	26.7
20	Potassium as K	mg/l	1.2	1.4	0.8	1.5
21	Total Boron as B	mg/l	0.006	0.014	0.009	0.120
22	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
23	Cyanides as CN	mg/l	<0.01	<0.01	<0.01	<0.01
24	Oil & grease	mg/l	<1.0	<1.0	<1.0	<1.0
25	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
26	Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
27	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
28	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.021	0.084	0.028	0.011
30	Chromium as Cr ⁶⁺	mg/l	<0.05	<0.05	<0.05	<0.05
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.057	0.127	0.087	0.114
33	Aluminum as Al	mg/l	0.009	0.015	0.008	0.027
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	SAR	-	0.91	1.21	0.57	1.44
36	Insecticides	mg/l	Absent	Absent	Absent	Absent
37	Anionic detergents as MBAS	mg/l	Absent	Absent	Absent	Absent
38	Total Coliforms	MPN/100	90	110	175	336

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

Page 1 of 1

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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Vimta
VIMTA LABS
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/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 1 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

VIMTA LABS
REGD. No.- DL 33004/99
Sr. No.-5
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/25-26/11867/001
Issued Date : 2025-09-04
P.O. No. : 8500005780
P.O. Date : 2022-06-29

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
 (Manager - Environment)

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

ISSUED TO:

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

Report Number : VLL/VLS/25-26/11867/001
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Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	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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Page 4 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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

TEST REPORT

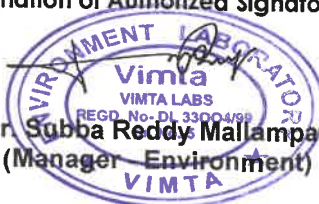
Sr. No.	Parameters	UOM	Limit IS 10500 : 2012	Parsabhata (B/W)	Parsabhata (D/W)	Karma Talkies (B/W)	Bhadrapada (D/W)
1	pH value	-	6.5-8.5 (NR)	7.36	6.86	6.85	6.84
2	Color	Hazen	5(15)	Colorless	Colorless	Colorless	Colorless
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	-	Agreeable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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


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

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

ISSUED TO:

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

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

Page 3 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory

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/25-26/11867/001

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P.O. No. : 8500005780

P.O. Date : 2022-06-29

Page 4 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

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



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

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SAMPLE PARTICULARS

SURFACE WATER SAMPLE (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

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

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SAMPLE PARTICULARS

: SURFACE WATER SAMPLE (BALCO PLANT)

Sample Registration Date

: 2025-08-13

Sampling Date

: 2025-08-07

Analysis Starting Date

: 2025-08-13

Analysis Completion Date

: 2025-08-26

Samples Details

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

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

- END OF THE REPORTS -

Name and Designation of Authorized Signatory

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****Issued Date****P.O. No.****P.O. Date****VLL/VLS/25-26/14073/001****2025-10-04****8500005780****2022-06-29****SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)**

Page 1 of 4

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
 (Manager - Environment)

ISSUED TO:

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

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

Page 2 of 4

SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

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

Analysis as per IS 10500: 2012 Drinking Water specification

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

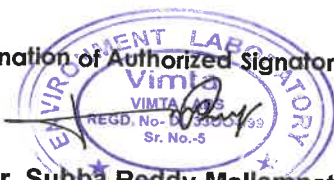
Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Test Required : Water Analysis as per IS 10500 : 2012
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory


Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory

Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory


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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

ISSUED TO:

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

Report Number : VLL/VLS/25-26/14073/001
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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : GROUND WATER SAMPLES (BALCO PLANT)

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

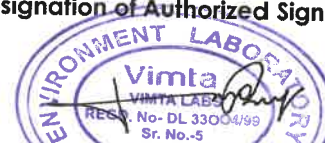
SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

Name and Designation of Authorized Signatory



Dr. Subba Reddy Mallampati
(Manager - Environment)

Vimta Labs Limited

Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 276 4141
F : +91 40 276 4147
M/s. Bharat Aluminum Company Limited,
BALCO
KORBA
Chhattisgarh



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2025-10-04
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2022-06-29

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

Sample Registration Date : 2025-09-15 Sampling Date : 2025-09-09
Analysis Starting Date : 2025-09-15 Analysis Completion Date : 2025-09-30
Samples Details : SW1-Bailgiri Nala (U/S)-Near Baigiri Village, SW2-Bailgiri Nala (D/S)-Near Bailgiri Basti,
SW3- Dhengu Nala (U/S) Risbabasti SW4- Dhengu Nala (D/S)-near Check post Balco

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory



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

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P.O. Date : 2022-06-29

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SAMPLE PARTICULARS : SURFACE WATER SAMPLE (BALCO PLANT)

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

SAMPLE COLLECTED BY VIMTA LABS LTD.

TEST REPORT

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

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

-END OF THE REPORTS-

Name and Designation of Authorized Signatory


REGD. No- DL 33004/99
Sr. No.-5
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/25-26/02532/Forage
	Issue Date:	2025-05-05
	P.O.No:	8500005780
	P.O. Date:	2022-06-29

FORAGE FLUORIDE

Registration Date: 2025-04-10

Sampling Date:

2025-04-08

Analysis starting date: 2025-04-10

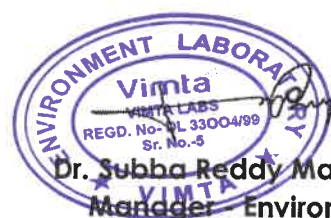
Analysis Completion date:

2025-04-16

Test Required :- Fluoride;

TEST RESULTS

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



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

FORAGE FLUORIDE**Registration Date: 2025-05-09****Sampling Date:****2025-05-07****Analysis starting date: 2025-05-09****Analysis Completion date:****2025-05-16****Test Required :- Fluoride;****TEST RESULTS**

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



Dr. Subba Reddy Mallampati
Manager - Environment

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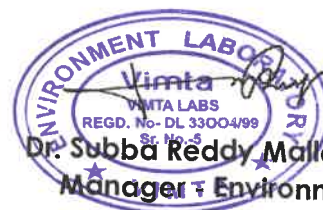
Hyderabad-500 051, Telangana, India

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/25-26/06982/Forage	
		Issue Date:	2025-07-05	
		P.O.No:	8500005780	
		P.O. Date:	2022-06-29	
FORAGE FLUORIDE				
Registration Date: 2025-06-07		Sampling Date: 2025-06-04		
Analysis starting date: 2025-06-07		Analysis Completion date: 2025-06-14		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	31
2	Near Parsabhata	PPM	80	16
3	Near Lal ghat	PPM	80	12
4	Near check post	PPM	80	14
5	Near Sharma petrol pump	PPM	80	18
6	Bhadrapara	PPM	80	12
7	Risdi	PPM	80	8
8	Rampur	PPM	80	10
9	Manikpur	PPM	80	12
10	jambahar	PPM	80	6
11	Rumgarha	PPM	80	11
12	Gerwan	PPM	80	12

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

ISSUED TO: M/s. Bharat Aluminium Company Limited, KORBA (C.G.)		Report No.:	VLL/VLS/25-26/09740/Forage	
		Issue Date:	2025-08-05	
		P.O.No:	8500005780	
		P.O. Date:	2022-06-29	
FORAGE FLUORIDE				
Registration Date: 2025-07-05		Sampling Date: 2025-07-02		
Analysis starting date: 2025-07-05		Analysis Completion date: 2025-07-11		
Test Required :- Fluoride;				
TEST RESULTS				
S. No.	Location	Unit	Norms	Results
1	In Side of the plant	PPM	80	38
2	Near Parsabhata	PPM	80	11
3	Near Lal ghat	PPM	80	14
4	Near check post	PPM	80	13
5	Near Sharma petrol pump	PPM	80	12
6	Bhadrapara	PPM	80	9
7	Risdi	PPM	80	10
8	Rampur	PPM	80	7
9	Manikpur	PPM	80	8
10	jambahar	PPM	80	6
11	Rumgarha	PPM	80	10
12	Gerwan	PPM	80	11


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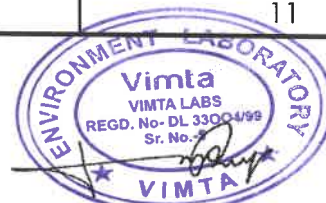
Registered Office
142, IDA Phase II, Cherlapally
Hyderabad-500 051, Telangana, India
T : +91 40 2726 4141
F : +91 40 2726 3657



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

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

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



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

FORAGE FLUORIDE

Registration Date: 2025-09-11

Sampling Date: 2025-09-09

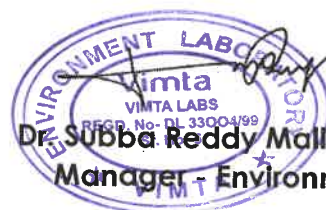
Analysis starting date: 2025-09-11

Analysis Completion date: 2025-09-17

Test Required :- Fluoride;

TEST RESULTS

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

Dr. Subba Reddy Mallampati
Manager - Environment

Sensitivity: Internal (C3)