



Letter No.: HIL/EC/GP- IV/5/2021 - 22 /90

20<sup>th</sup> May, 2021

**The Director (s)**  
**Ministry of Environment, Forest & Climate Change**  
**Regional Office, (West Central Zone)**  
**Ground Floor, East Wing**  
**New Secretariat Building**  
**Ground Floor, Civil Lines, Opposite VCA Ground**  
**Nagpur-440001.**

**Subject: Half Yearly EC Compliance Report for 1 MTPA Under Ground Captive Coal Mine, Gare Palma IV/5 Coal Mines of Hindalco Industries Limited, Village – Milupara, Tehsil – Tamnar, District – Raigarh, Chhattisgarh.**

**Respected Sir,**

This has reference to the Environment Clearance Letter no. – J-11015/8/1998- IA –II. (M) dated 16.04.2015 (Transferred in favour of HIL). We are submitting herewith the Half Yearly EC Compliance Report along with Environmental Monitoring Report (Hard & Soft) for the period from **October 2020 to March 2021** for your kind perusal please.

The receipt of the report may kindly be acknowledged.

Yours faithfully,  
For **Hindalco Industries Limited,**

**Dipesh Bhatia**

**(Vice President – GP Coal Mines)**

Encl.: As Above.

- CC.: 1. Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, Raipur Chhattisgarh.
2. Regional Officer, Chhattisgarh Environment Conservation Board, TV tower Road, Raigarh (CG).
3. The Regional Director, Regional Directorate (Central), Bhopal Central Pollution Control Board (MoEF & CC, GOI), “Parivesh Bhawan” Paryavaran Parishar, E – 5, Arera Colony, Bhopal (MP), 462016
4. The Director MoEF & CC, New Delhi.
5. Member Secretary, CPCB, New Delhi.
6. The Integrated Regional Office, Ministry of Environment Forests & Climate Change (MoEF & CC) Aranya Bhawan, North Block, Sector – 19, Naya Raipur, Atal Nagar, Chhattisgarh, 492002

**Compliance Report on conditions of Environment Clearance for Gare-Palma IV/5 coal mining project Transfer by Ministry of Environment, Forests & Climate Change vide letter no. J-11015/8/1998-IA. II (M) Dated: - 16<sup>th</sup> April 2015 for Under Ground Mining 1.0 Million Ton/Annum Production Capacity.**

Sr. No.	Conditions	Status
1	Any change in scope of work will attract the provisions of Environment Protection Act (EPA), 1986 and Environment Impact Assessment Notification, 2006 in conjunction with the subsequent amendments/circulars.	Noted.
2	All conditions stipulated in the EC letter No.J-11015/8/1998-IA.II (M) dated 31 <sup>st</sup> August, 2000 shall remain unchanged.	Noted.
3	The successful bidder shall be liable, if any, for any act of violation of the EPA 1986/EIA Notification 2006/subsequent amendments and circulars which it has inherited during the transfer.	Noted.
4	Successful bidder shall be liable for compliance of all court directions, if any.	Noted.

**Compliance Report on conditions of Environment Clearance for Gare-Palma IV/5 coal mining project given by Ministry of Environment, Forests & Climate Change vide letter no. J-11015/ 8/1998-IA. II (M) Dated: - 31<sup>st</sup> August 2000 for Under Ground Mining 1.0 Million Ton/Annum Production Capacity**

Sr. No.	Conditions	Status
<b>A. Specific Conditions</b>		
i	Regular Monitoring of subsidence movement on the surface over working areas and impact on water bodies/vegetation/ structures/ surroundings should be continued till movement ceases completely. In case of observation of any high rates of subsidence movement, appropriate measures should be taken to avoid loss of life and materials. Cracks should be effectively plugged with ballast and clayey soil/ suitable material.	The method of mining at Gare Palma IV/5 coal mine is Bord & Pillar. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural pattern, water bodies, vegetation, structure, roads and surroundings is being done by internal expert. During the observation no subsidence movement has been observed. In future, if any subsidence movement is found, appropriate effective corrective measures will be taken to avoid loss of life and material. Cracks will be effectively plugged with ballast

		and clayey soil/suitable material if observed. The subsidence study was already carried out for working panel by CSIR – Central Institute of Mining & Fuel Research Dhanbad in May 2019 for GP IV/5 Coal mines.
ii	Adequate underground barrier should be left in consultation with the Director General of Mines & Safety (DGMS). Depillaring should also be carried out after taking approval from DGMS.	Adequate underground barrier as required are being maintained between the working face and the river in consultation with DGMS and also at other places whenever required. Depillaring operation was not carried out during last six months. Appropriate permission from DGMS will be taken as and when depillaring will be under taking.
iii	Garland drains should be constructed around the waste rock and ore stockpiles to prevent surface run-off.	Garland drain have been constructed around the coal stock yard to prevent the surface run-off.
iv	A Green Belt of adequate width should be raised by planting the local species along the mine boundary, Waste rock dumps, ore stockpile, ventilation fan road and selected open areas in consultation with local DFO/ Agriculture Department. Density of tree should be at least 2500 plants per ha.	Plantation in mines area is being done. At present <b>48100 nos.</b> of trees have been planted within the Mine boundary and other places. Trees species planted are Gulmohar, Ashoka Aam, Imli, Shisam, Eucalyptus, Neem, Jamun, Accassia spp. etc. in consultation with DFO. Plantation has been carried out @2500 per hectare and will also be ensure in future. Plantation details enclosed as <b><u>Annexure –1.</u></b>
v	Compensation to the 14 land losers from whom private land will be acquired should be paid as per the state government norms.	Compensation to the 14 land losers has been paid by the company.
vi	The project authority should conduct a subsidence estimation study and submit the report to the Ministry within six months.	Subsidence estimation study report has been submitted to the Ministry by Prior allottee.
vii	The project proponent will construct "Check dams "at the sites proposed by the State Ground water Department in their report. While undertaking the proposed	As per requirement the check dam site will be constructed in consultation with state forest department and Ground water

	mining, the construction of the check dams should be carried out in with Ground water survey department, Government of MP (presently Chhattisgarh) and should have necessary financial provision and technical expertise. This should be communicated to the MoEF and CGWB.	survey department, Government of Chhattisgarh and will be communicated to MOEF& CC and CGWA.
viii	Regular monitoring of the Ground water level and quality should be carried out by establishing a network of existing wells and constructing new Piezometer during the mining operations. The interval of monitoring should be four times a year- Pre monsoon (April to May), Monsoon (August), Post Monsoon (November) and winter (January). The data thus collected may be sent regularly to MoEF and CGWB for information.	Regular monitoring of groundwater level and quality of the area is being carried out by establishing a network of existing wells/Piezometers. The Ground water level ( <b>from Oct 20 to March 21</b> ) and quality Monitoring report of <b>Post- Monsoon (Nov 20) and Winter (January 21)</b> is attached as <b><u>Annexure No.-2.</u></b>  Quarterly monitoring report of Ground Water Level (from Oct 2020 to Dec 2020) and (from January 2021 to March 2021) & GW Quality Monitoring for the month of <b>Post- Monsoon (Nov 20) and Winter (January 21)</b> were submitted to MoEF & CC, CPCB and CECB on quarterly within one month of monitoring basis. Attached as <b>Annexure No. – 3.</b>
ix	Digital processing of the entire lease using remote sensing technique should be regularly once in three years for monitoring land use pattern and report submitted to MoEF and its regional officer.	Report on Assessment of Land Use / Land Cover using High Resolution Satellite Imagery for the GP Mine IV/5 Coal Mine was carried out by IndiGEO Consultants, Bangalore in the month of December 2019 and the report was submitted to your office dated 27 May 2020.
x	A detailed mine decommissioning plan should be submitted to the MoEF, five years in advance for approval.	Detailed mine decommissioning plan will be submitted to the Ministry of Environment and forests, five years in advance for approval.
<b>B. General Conditions</b>		
i	No change in mining technology and scope of working should be made without prior approval of the MoEF.	Noted and being complied.



ii	No change in the calendar plan including excavation quantum of mineral coal and waste should be made.	Noted. Coal production restricted within EC limit.
iii	Four ambient air quality stations should be established in the core zone as well as the buffer zone for RPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> & CO Monitoring. Location of stations should be decided based on the meteorology data, topographical features and environmental and ecologically sensitive targets in consultation with the State Pollution Control Board.	Four ambient air quality monitoring stations have been established in consultation with the State Pollution Control Board and regular monitoring is being carried out. Copy of Monitoring Report from the period <b>October 2020 to March 2021</b> is enclosed as <b><u>Annexure -4.</u></b>
iv	Data of ambient air quality (RPM, SPM, SO <sub>2</sub> , NO <sub>x</sub> & CO) should be regularly submitted to the Ministry including its Regional Officer at Bhopal (Currently Raipur) and the State Pollution Control Board & Central Pollution Control Board (Currently Raipur).	Four ambient air quality monitoring stations have been established and regular monitoring is being carried out. Reports are being periodically furnished to SPCB. Copy of Monitoring Report from the period <b>October 2020 to March 2021</b> is already enclosed
v	Drill should be wet operated.	Wet drilling is under practice.
vi	Fugitive dust emission from all the sources should be controlled, regularly monitored and the data recorded properly. Water spraying arrangement on haul roads, Wagons, loading dump trucks (loading and unloading) should be provided and properly maintained.	Fixed type water sprinkler has been provided at all along the roads, and loading points etc. to control the fugitive dust emission. Photographs of fixed type of water sprinklers at GP IV/5 Coal Mines is attached as <b><u>Annexure – 4A</u></b>
vii	Adequate measures should be taken for control of noise level below 80db in the work environment. Workers engaged in blasting and drilling operation, operations of HEMM etc. should be provided with ear plugs/ muffs	Ear muffs/plugs has been provided to the all workers engaged in blasting and drilling operations, operations of HEMM etc. The Noise monitoring report from the period <b>October 2020 to March 2021</b> is enclosed as <b><u>Annexure - 5.</u></b>
viii	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform on the standards prescribed under GSR 422 dated 19.05.1993 and 31.12.1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents in to the pond.	We have constructed 05 Nos. of settling pond & 02 nos of ETP (Capacity 200 m <sup>3</sup> / Hr Each) along with Lamella clarifier with chemical dosing arrangement for the treatment of mine seepage water, the treated water is being used for spraying / sprinkling on mines roads and also for greenbelt development inside the mine premises & remaining treated

		<p>water from ETP is being distributed to the nearby villagers for irrigation &amp; agriculture purpose (other than drinking).</p> <p>Copy of Monitoring Report from the period <b>October 2020 to March 2021</b> is attached as <b>Annexure – 6</b></p> <p>Photographs of Treatment Facility at GP IV/5 Coal Mines is attached as <b>Annexure – 6A</b></p>
ix	Acid mine water if any has to be treated and disposed off after conforming to the standards prescribed by the competent authority.	<p>There is no acid mine water. Provided ETP (Capacity 200 m<sup>3</sup> / Hr Each) along with Lamella clarifier with chemical dosing arrangement for the treatment of mine seepage water and the analysis report of treated water quality are being periodically furnished to SPCB.</p> <p>.</p>
x	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board	<p>We have engaged CECB &amp; MoEF&amp;CC approved and NABL accredited Laboratory i.e. M/s Ultimate Enviroltysical Solutions Raipur to carried out the mine environmental parameters monitoring.</p> <p>Approval letter of Monitoring Agency from CECB Raipur, MoEF&amp;CC &amp; NABL accredited Laboratory certificate is attached as <b>Annexure No. – 7</b></p>
xi	Personnel working in dust area should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance of the workers should be undertaken periodically to observe any contractions due to exposure to coal dust and take corrective measures if needed.	<p>Personnel working in dusty areas are wearing protective respiratory devices and they have also been provided with adequate training and information on safety and health aspect. Occupational health surveillance program of the workers is being undertaken periodically to observe any contraction due to exposure to coal dust and corrective measures will be taken accordingly.</p>
xii	A separate environmental management cell with suitable qualified personnel should be set up under the control of a	A separate Environmental Management Department is

	senior executive who will report directly to the Head of the Organization.	functioning at Coal Mine under the direct control of a senior executive.
xiii	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to Ministry.	The funds earmarked for environmental protection measures has been budgeted separately and not been diverted for other purposes. Environmental Expenditure details from <b>October 2020 to March 2021</b> is enclosed as <b><u>Annexure – 8</u></b>
xiv	The Regional Officer of the ministry located at Bhopal (currently Raipur) shall monitor compliance of the stipulated conditions. The project authorities should extent full co-operation to the officer (s) of the Regional Officer by furnishing requisite data information / monitoring reports	Agreed and cooperation will be extended on time to time.
xv	A copy of the clearance letter will be marked to concerned Panchayat/ local NGO if any from whom suggestion / representation has been received while processing the proposal	Complied by Prior Allottee.
xvi	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's office for 30 days	Complied by Prior Allottee.
xvii	The project authorities should advertise at least two local newspapers widely circulated around the project one of which shall be in vernacular language of the locality concerned informing that the project has been accorded environmental clearance and the copy of the clearance letter is available with the State Pollution Control Board and may also be seen at web site of the MoEF at <a href="http://envfor.nic.in">http://envfor.nic.in</a>	Complied by Prior Allottee.

# Annexure - 1

**Hindalco Industries Limited**  
**Green Belt Development Status**

Year wise plantation details of Gare Palma IV/5 Coal Mine						
Year	Location	No. of Tree Planted (Approx.)	Survival Rate (%)	Number of Plant Survived	Area Covered in Plantation (hectare)	Sapling Details
Upto 2015	Coal mine lease area	30000	82.00	24600	9.84	Neem, Mahua, Jamun, Mango, Guava, Imli, Drumstick, Teak, Shivan / Ghamar, Sisham, Sirus, Bamboo, Peltafarm, Nilgiri, Amla etc
2016		2000	85.00	1700	0.68	
2017		5000	80.00	4000	1.60	
2018		5000	85.00	4250	1.70	
2019		5000	90.00	4500	1.80	
2020		1100	100.00	1100	0.44	
<b>Total</b>		<b>48100</b>	<b>83.47</b>	<b>40150</b>	<b>16.1</b>	

*Note : Gap filling of plants is a continuous process*

**Green Belt Development Photographs**





Annexure - 1



# Annexure - 2

**Ground Water Level Monitoring Report in and around the Coal Mine Area  
(From Oct 2020 to Dec 2020)**

Sr. No.	Location	Types of Structure	In Meters		
			Ground Water level (BGL) October 2020	Ground Water level (BGL) November 2020	Ground Water level (BGL) December 2020
1	Bankheta (Near HIL Office)	Borewell/AWLR	4.35	10.00	10.76
2	Banjikhoh (Near Office)	Borewell/AWLR*	22.96	23.52	23.18
3	Milupara (Near Office)	Borewell/AWLR*	7.95	9.30	10.30
4	HIL Staff Quarter	Borewell/AWLR	3.60	4.56	4.87
5	Milupara Village (PHC-HIL)	Dugwell	1.10	4.45	4.54
6	Sakta Village (Near Primary School)	Dugwell	2.05	3.41	3.31
7	Sidarpara Village (Near Primary School)	Dugwell	5.34	8.00	8.59
8	Beljor Village	Dugwell	4.06	6.00	6.08

(AWLR\* - Automatic Water level recorder under maintenance)



**Ground Water Level Monitoring Report in and around the Coal Mine Area  
(From January 2021 to March 2021)**

Sr. No.	Location	Types of Structure	In Meters		
			Water level (BGL) January 2021	Water level (BGL) February 2021	Water level (BGL) March 2021
1	Bankheta (Near HIL Office)	Borewell	10.96	11.36	11.64
2	Banjikhoh (Near Office)	Borewell	23.43	23.54	23.71
3	Milupara (Near Office)	Borewell	8.52	12.27	12.71
4	HIL Staff Quarter	Borewell	5.23	6.62	7.43
5	Milupara Village (PHC-HIL)	Dugwell	6.23	6.80	7.00
6	Sakta Village (Near Primary School)	Dugwell	3.90	4.10	4.32
7	Sidarpara Village (Primary School compound)	Dugwell	9.65	9.80	10.60
8	Beljor Village	Dugwell	7.50	7.80	8.00



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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<b>Name &amp; Address Of The Customer</b> <b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,</b> <b>VILLAGE - BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		REPORT NO	UES/TR/20-21/03143	
		LAB REF NO	UES/20-21/W/02790	
		DATE OF SAMPLING	24/11/2020	
		DATE OF RECEIPT	25/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	BANKHETA MINE (PIEZOMETER) AWLR		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.92
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	1.2
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	128
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	79.7
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	77.5
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	2.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	32.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	22.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	10.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	8.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	2.4
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	16.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	12.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.68
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	16.4
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	1.64





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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.12
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.



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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

#### REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test(s) only.

*Thakur*  
03/12/2020  
PREPARED BY



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03144		
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA – IV/4, COAL MINE, VILLAGE – BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/02791		
		DATE OF SAMPLING	24/11/2020		
		DATE OF RECEIPT	25/11/2020		
		DATE OF REPORT	03/12/2020		
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020	
		<b>SAMPLE DETAILS</b>			
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANJIKHOL MINE (PIEZOMETER) AWLR		SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST	
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B,1-39		QUANTITY RECEIVED	5 LTR	

Report No. 03144

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.86
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	4.2
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	138.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	86.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	84.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	38.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	66.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	28.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	16.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	11.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	16.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	22.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	2.8
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	16.2



### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.78
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	N.D.
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003,	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o.p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.



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Report No. 03144

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

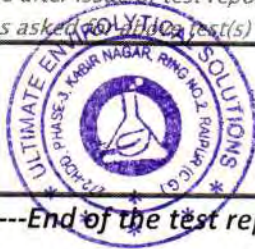
Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

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- This is for information as the party has asked to apply test(s) only.

*Thakur*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03145		
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b> <b>BANKHETA, POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/02792		
		DATE OF SAMPLING	24/11/2020		
		DATE OF RECEIPT	25/11/2020		
		DATE OF REPORT	03/12/2020		
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020	
<b>SAMPLE DETAILS</b>					
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	SAKTA VILLAGE, (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST	
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR	

Report No.03145

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	2.5
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.24
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.8
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	236.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	147.8
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	143.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	4.8
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	68.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	96.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	44.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	52.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	17.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	12.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	28.2
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	20.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.32
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	12.6
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.86





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Report No.03145

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.18
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.10
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o.p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.





HDD-272, Phase III - Near JP Chowk  
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Report No.03145

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test(s) only.

*Thakur*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03146	
<b>TO,</b>		LAB REF NO	UES/20-21/W/02793	
<b>HINDALCO INDUSTRIES LIMITED,</b>		DATE OF SAMPLING	24/11/2020	
<b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b>		DATE OF RECEIPT	25/11/2020	
<b>BANKHETA, POST -MILUPARA,</b>		DATE OF REPORT	03/12/2020	
<b>DISTT. - RAIGARH (C.G.) 496107.</b>		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BELJOR VILLAGE (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.24
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.96
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	586
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	362
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	355
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	7.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	156.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	188.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	102.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	88.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	40.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	21.3
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	66.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	21.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.64
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	4.2
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B,	-	-	1.6





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
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Report No.03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			3-87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.24
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100 ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.





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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Report No.03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508- 1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508- 1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for test(s) only.

*Thakur*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<b>Name &amp; Address Of The Customer</b>		<b>REPORT NO</b>	UES/TR/20-21/03176	
<b>TO,</b>		<b>LAB REF NO</b>	UES/20-21/W/02823	
<b>HINDALCO INDUSTRIES LIMITED,</b>		<b>DATE OF SAMPLING</b>	25/11/2020	
<b>GARE PALMA - IV/5, MILUPARA</b>		<b>DATE OF RECEIPT</b>	26/11/2020	
<b>U/G COAL MINE,VILLAGE - MILUPARA,</b>		<b>DATE OF REPORT</b>	03/12/2020	
<b>BLOCK-TAMNAR,</b>		<b>DATE OF ANALYSIS</b>	START:26/11/2020	END:03/12/2020
<b>DISTT. - RAIGARH (C.G.) 496107</b>				
<b>SAMPLE DETAILS</b>				
<b>SAMPLE TYPE</b>	GROUND WATER		<b>ORDER /REFERENCE:</b>	M/FO/SRV/2021/0044, DTD. 21-AUG-2020
<b>CUSTOMER SAMPLE ID</b>	STAFF QUARTER-BANJIKHOL PIEZOMETER (AHLR)		<b>SAMPLE CONDITION AT RECEIPT</b>	OK
<b>PACKING OF SAMPLE</b>	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	<b>SAMPLE COLLECTED BY</b>	CHEMIST
<b>SAMPLING PROCEDURE</b>	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		<b>QUANTITY RECEIVED</b>	5 LTR

REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025:(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025:(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.84
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	16.4
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	188.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	122.6
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	114.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	8.6
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	68.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500- Ca-B, 3-67	-	-	28.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	40.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	11.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.7
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	32.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-190	200	400	24.2
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	0.96
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.8



REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.6
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.12
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981; RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981; RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981;RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

#### REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for test(s) only.

*Shafiq*  
PREPARED BY  
03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Chandrababu*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
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<b>Name &amp; Address Of The Customer</b>		<b>REPORT NO</b>	UES/TR/20-21/03177	
<b>TO,</b>		<b>LAB REF NO</b>	UES/20-21/W/02824	
<b>HINDALCO INDUSTRIES LIMITED,</b>		<b>DATE OF SAMPLING</b>	25/11/2020	
<b>GARE PALMA - IV/5, MILUPARA</b>		<b>DATE OF RECEIPT</b>	26/11/2020	
<b>U/G COAL MINE,VILLAGE - MILUPARA,</b>		<b>DATE OF REPORT</b>	03/12/2020	
<b>BLOCK-TAMNAR,</b>		<b>DATE OF ANALYSIS</b>	START:26/11/2020	END:03/12/2020
<b>DISTT. - RAIGARH (C.G.) 496107</b>				
<b>SAMPLE DETAILS</b>				
<b>SAMPLE TYPE</b>	GROUND WATER		<b>ORDER /REFERENCE:</b>	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
<b>CUSTOMER SAMPLE ID</b>	NEAR MILUPARA MINES OFFICE PIEZOMETER -AWLR		<b>SAMPLE CONDITION AT RECEIPT</b>	OK
<b>PACKING OF SAMPLE</b>	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	<b>SAMPLE COLLECTED BY</b>	CHEMIST
<b>SAMPLING PROCEDURE</b>	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		<b>QUANTITY RECEIVED</b>	5 LTR

REPORT NO. -03177

<b>TEST REPORT</b>						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.82
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	2.8
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	168
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G,4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	104.6
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	102.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	2.6
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	38.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	22.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	16.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	8.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	6.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> - E,4-190	200	400	16.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	2.8
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.





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REPORT NO. -03177

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
20	Sodium (as Na)	mg/Lit	APHA 22nd Ed.2012,3500-Na-B, 3-97	-	-	6.0
21	Potassium (as K)	mg/Lit	APHA 22nd Ed.2012,3500-K-B, 3-87	-	-	0.85
22	Boron (as B)	mg/Lit	APHA 22nd Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
23	Iron (as Fe)	mg/Lit	APHA 22nd Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
24	Fluoride (as F)	mg/Lit	APHA 22nd Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.12
25	Manganese (as Mn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
26	Lead (as Pb)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
27	Nickel (as Ni)	mg/Lit	APHA 22nd Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
28	Zinc (as Zn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	5	15	N.D.
29	Copper (as Cu)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
30	Cadmium (as Cd)	mg/Lit	APHA 22nd Ed.2012,3500-Cd,3-105	0.003	No Relaxation	N.D.
31	Mercury (as Hg)	mg/Lit	APHA 22nd Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
32	Arsenic (as As)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
33	Selenium (as Se)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
34	Chromium (as Cr)	mg/Lit	APHA 22nd Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
35	Anionic Detergent (as MBAS)	mg/Lit	APHA 22nd Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
36	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22nd Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
37	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22nd Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
38	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
39	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH	µg/L	US EPA 508-1995	2		N.D.





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REPORT NO. -03177

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
	(Lindane)					
7	Alpha-HCH	µg/L	US EPA 508-1995		0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for test(s) only

*Thakur*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





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<i>Name &amp; Address Of The Customer,</i>		REPORT NO	UES/TR/20-21/03178	
<b>TO,</b>		LAB REF NO	UES/20-21/W/02825	
<b>HINDALCO INDUSTRIES LIMITED,</b>		DATE OF SAMPLING	25/11/2020	
<b>GARE PALMA - IV/5, MILUPARA</b>		DATE OF RECEIPT	26/11/2020	
<b>U/G COAL MINE,VILLAGE - MILUPARA,</b>		DATE OF REPORT	03/12/2020	
<b>BLOCK-TAMNAR,</b>		DATE OF ANALYSIS	START:26/11/2020	END:03/12/2020
<b>DISTT. - RAIGARH (C.G.) 496107</b>				
SAMPLE DETAILS				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	MILUPARA VILLAGE NEAR PHC- HIL (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART 1):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. - 03178

## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.89
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	64.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	264
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	182
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	160
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	22.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	76.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca- B,3-67	-	-	32.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg- B,3-84	-	-	44.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca- B,3-67	75	200	12.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	10.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	8.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> - E, 4-190	200	400	26.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> - B,4-122	45	No Relaxation	1.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na- B, 3-97	-	-	4.8
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.6





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## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.11
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.28
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.





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## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508- 1995.	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508- 1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after the report unless otherwise agreed with customer.
- > This is for information as the party has agreed (S.O.P) only.

PREPARED BY *Thakur* 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur* 03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





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<b>Name &amp; Address Of The Customer</b>		<b>REPORT NO</b>	UES/TR/20-21/03179	
<b>TO,</b>		<b>LAB REF NO</b>	UES/20-21/W/02826	
<b>HINDALCO INDUSTRIES LIMITED,</b>		<b>DATE OF SAMPLING</b>	25/11/2020	
<b>GARE PALMA - IV/5, MILUPARA</b>		<b>DATE OF RECEIPT</b>	26/11/2020	
<b>U/G COAL MINE,VILLAGE - MILUPARA,</b>		<b>DATE OF REPORT</b>	03/12/2020	
<b>BLOCK-TAMNAR,</b>		<b>DATE OF ANALYSIS</b>	START:26/11/2020	END:03/12/2020
<b>DISTT. - RAIGARH (C.G.) 496107</b>				
<b>SAMPLE DETAILS</b>				
<b>SAMPLE TYPE</b>	GROUND WATER		<b>ORDER /REFERENCE:</b>	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
<b>CUSTOMER SAMPLE ID</b>	SIDARPARA VILLAGE (DUGWELL)		<b>SAMPLE CONDITION AT RECEIPT</b>	OK
<b>PACKING OF SAMPLE</b>	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	<b>SAMPLE COLLECTED BY</b>	CHEMIST
<b>SAMPLING PROCEDURE</b>	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39		<b>QUANTITY RECEIVED</b>	5 LTR

REPORT NO. - 03179

## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H*-B, 4-92	6.5-8.5	No Relaxation	7.38
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.38
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	296
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	182.2
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	180
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	52.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	76.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	38.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	38.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	15.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.2
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	10.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	18.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	2.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.2
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	0.9





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. - 03179

## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.08
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.





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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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REPORT NO. - 03179

## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995*	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after the report unless otherwise agreed with customer.
- > This is for information as the party has agreed to the terms and conditions (s) only.

*Prepared by*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Authorized Signatory*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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<b>Name &amp; Address Of The Customer</b> <b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,</b> <b>VILLAGE - BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		REPORT NO	UES/TR/20-21/03975	
		LAB REF NO	UES/20-21/W/03660	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANKHETA MINE (PIEZOMETER)AWLR	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.86
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	1.03
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	130.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	80.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	78.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	36.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	14.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	22.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	5.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.3
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	12.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	10.5
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.54
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.3
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	1.05



**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.13
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

**Microbiological Analysis**

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

**Pesticides**

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.

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Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508- 1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508- 1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test(s) only.

PREPARED BY

*Thakur*  
02/02/2021



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

AUTHORIZED SIGNATORY

*Thakur*  
02/02/2021

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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<i>Name &amp; Address Of The Customer</i>		<b>REPORT NO</b>	UES/TR/20-21/03976		
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		<b>LAB REF NO</b>	UES/20-21/W/03661		
		<b>DATE OF SAMPLING</b>	22/01/2021		
		<b>DATE OF RECEIPT</b>	23/01/2021		
		<b>DATE OF REPORT</b>	02/02/2021		
		<b>DATE OF ANALYSIS</b>	START:23/01/2021	END:02/02/2021	
		<b>SAMPLE DETAILS</b>			
<b>SAMPLE TYPE</b>	GROUND WATER		<b>ORDER /REFERENCE:</b>	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
<b>CUSTOMER SAMPLE ID</b>	BANJIKHOL MINE (PIEZOMETER) AWLR		<b>SAMPLE CONDITION AT RECEIPT</b>	OK	
<b>PACKING OF SAMPLE</b>	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	<b>SAMPLE COLLECTED BY</b>	CHEMIST	
<b>SAMPLING PROCEDURE</b>	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B,1-39		<b>QUANTITY RECEIVED</b>	5 LTR	

Report No. 03976

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.84
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	4.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	142.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	94.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	92.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	34.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	68.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	32.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	36.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	12.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	8.7
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	14.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	20.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	3.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.2

Report No. 03976

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.68
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	N.D.
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003,	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.



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Report No. 03976

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for report(s) only.

*Thakur*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Thakur*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03977
<b>TO,</b>		LAB REF NO	UES/20-21/W/03662
<b>HINDALCO INDUSTRIES LIMITED,</b>		DATE OF SAMPLING	22/01/2021
<b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b>		DATE OF RECEIPT	23/01/2021
<b>BANKHETA, POST -MILUPARA,</b>		DATE OF REPORT	02/02/2021
<b>DISTT. - RAIGARH (C.G.) 496107.</b>		DATE OF ANALYSIS	START:23/01/2021    END:02/02/2021
<b>SAMPLE DETAILS</b>			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	SAKTA VILLAGE, (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN    SEALED 1 L X 1 NO. GLASS BOTTLE	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

Report No.03977

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part 4)	5	15	2.3
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.31
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	239.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	148.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	144.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	4.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	70.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	98.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	42.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	56.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	16.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	13.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	22.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.30
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	11.4
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.81



Report No. 03977

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

**Microbiological Analysis**

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

**Pesticides**

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.

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Report No. 03977

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for (test) only.

*Shikhar*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Shikhar*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03978	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b> <b>BANKHETA, POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03663	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START:23/01/2021	END:02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BELJOR VILLAGE (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03978

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.26
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.91
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	589.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	365.3
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	358.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	7.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	158.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	190.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	112.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	78.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	44.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	18.9
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	65.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	22.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.75
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	4.0



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Report No. 03978

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.3
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.11
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100 ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.



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Report No. 03978

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508- 1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508- 1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

*Thakur*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Thakur*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04011	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03696	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	STAFF QUARTER-BANJIKHOL PIEZOMETER (AWLR)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003: APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

REPORT NO. 04011

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025:(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025:(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.74
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	15.3
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	192.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	124.4
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	116.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	8.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	70.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	24.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	28.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-100	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	0.92
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	7.6



REPORT NO. 04011

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.2
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gemme-HCH (Lindene)	µg/L	US EPA 500 1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. 04011

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.U.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

#### REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for test(s) only.

*Thakur*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Thakur*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04012	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03697	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	NEAR MILUPARA MINES OFFICE PIEZOMETER -AWLR		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X I NO. PVC CAN 1 L X I NO. PVC CAN 1 L X I NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.79
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.1
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	172.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G,4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	106.5
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	104.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	2.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	48.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	34.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	14.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	13.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.4
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	8.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> - E,4-190	200	400	14.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	2.4
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.

REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
20	Sodium (as Na)	mg/Lit	APHA 22nd Ed.2012,3500-Na-B, 3-97	-	-	6.2
21	Potassium (as K)	mg/Lit	APHA 22nd Ed.2012,3500-K-B, 3-87	-	-	0.78
22	Boron (as B)	mg/Lit	APHA 22nd Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
23	Iron (as Fe)	mg/Lit	APHA 22nd Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
24	Fluoride (as F)	mg/Lit	APHA 22nd Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
25	Manganese (as Mn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
26	Lead (as Pb)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
27	Nickel (as Ni)	mg/Lit	APHA 22nd Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
28	Zinc (as Zn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	5	15	N.D.
29	Copper (as Cu)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
30	Cadmium (as Cd)	mg/Lit	APHA 22nd Ed.2012,3500-Cd,3-105	0.003	No Relaxation	N.D.
31	Mercury (as Hg)	mg/Lit	APHA 22nd Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
32	Arsenic (as As)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
33	Selenium (as Se)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
34	Chromium (as Cr)	mg/Lit	APHA 22nd Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
35	Anionic Detergent (as MBAS)	mg/Lit	APHA 22nd Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
36	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22nd Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
37	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22nd Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
38	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
39	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH	µg/L	US EPA 508-1995	2		N.D.



Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
	(Lindane)					
7	Alpha-HCH	µg/L	US EPA 508-1995		0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected

#### REMARKS: RESULTS ARE AS ABOVE

##### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only

*Thakur*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Thakur*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04013	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03698	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	MILUPARA VILLAGE NEAR PHC- HIL (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39	QUANTITY RECEIVED	5 LTR	

REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.91
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	62.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	270.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	185.2
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	164.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	21.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	30.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca- B,3-67	-	-	38.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg- B,3-84	-	-	40.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca- B,3-67	75	200	15.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.72
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	10.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> - E, 4-190	200	400	24.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500 NO <sub>3</sub> B,4-122	45	No Relaxation	2.3
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na- B, 3-97	-	-	5.1
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.1



REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.09
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	o,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.

REPORT NO. - 04013

## TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phorateculphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

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- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

*Shubanshu*  
PREPARED BY 02/02/2021



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Shubanshu*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04014	
<b>TO,</b>		LAB REF NO	UES/20-21/W/03699	
<b>HINDALCO INDUSTRIES LIMITED,</b>		DATE OF SAMPLING	22/01/2021	
<b>GARE PALMA - IV/5, MILUPARA</b>		DATE OF RECEIPT	23/01/2021	
<b>U/G COAL MINE,VILLAGE - MILUPARA,</b>		DATE OF REPORT	02/02/2021	
<b>BLOCK-TAMNAR,</b>		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>DISTT. - RAIGARH (C.G.) 496107</b>				
SAMPLE DETAILS				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	SIDARPARA VILLAGE (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025(PART I): 1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39	QUANTITY RECEIVED	5 LTR	

REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.41
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.32
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	298
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	184.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	182.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	50.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	32.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	7.77
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	11.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	17.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	NO Relaxation	3.1
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.0
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	0.8

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REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.16
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-100	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508 1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.



Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994			N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

*Thakur*  
02/02/2021  
PREPARED BY



For **ULTIMATE ENVIROLYTICAL SOLUTIONS**

*Thakur*  
02/02/2021  
AUTHORIZED SIGNATORY

-----End of the test report-----

# Annexure - 3



012



Letter No. : HIL/EC/GP-IV/5-Q3/2020/337

4 January, 2021

**The DDGF (Central), Regional Office,**  
Ministry of Environment Forests & Climate Change (MoEF & CC)  
Regional Office, (West Central Zone)  
Ground Floor, East Wing  
New Secretary Building,  
Civil Line, Nagpur – 440001

**Sub.: Compliance of condition no. viii of Environment Clearance Letter no. – J-11015/ 8/1998-IA. II (M)**  
**Dated: - 31<sup>st</sup> August 2000 for Under Ground Mining 1.0 Million Ton/Annum Production Capacity.**

**Ref.:** Environment Clearance Letter no. – letter no. J-11015/ 8/1998-IA. II (M) Dated: - 31<sup>st</sup> August 2000.

Dear Sir,

With reference to above subject, we are submitting herewith the quarterly monitoring report of Ground Water Level (from Oct. 2020 to December 2020) & GW Quality for the month of November 2020 – Post monsoon period of Gare Palma IV/5 Coal Mines, Hindalco Industries Limited, Village – Milupara, Tehsil – Tamnar, District – Raigarh, Chhattisgarh.

We would like to inform you that automatic water level recorder installed at Banjikhoh (Near Office) & Milupara (Near Office) are under maintenance due to some hardware related error, so we are submitting the manual ground water level monitoring results.

Thanking you,

Yours faithfully,

**Dipesh Bhatia**  
(Vice President – GP Mines)  
For Hindalco Industries Limited



Encl: As above

- CC: 1) Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, Raipur, Chhattisgarh.  
2) Regional Officer, Chhattisgarh Environment Conservation Board, TV tower Road, Raigarh (CG).  
3) The Regional Director, Regional Directorate (Central), Bhopal Central Pollution Control Board (MoEF & CC, GOI), "Parivesh Bhawan" Paryavaran Parishar, E – 5, Arera Colony Bhopal (MP), 462016  
4) The Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, 2nd Floor, LK Corporate and Logistic Park, Dumartarai, Raipur-492015  
5) Member Secretary, Central Ground Water Authority, 18/11, Jamnagar House, Mansingh Road, New Delhi - 110011

**Hindalco Industries Limited**

Gare Palma Mines (IV/4 & IV/5), VIII & Po: Milupara, Tehsil: Tamnar Dist: Raigarh- 496107, Chhattisgarh  
T: +91 7762 228212, Website : www.hindalco.com E mail : hindalco@adityabirla.com  
Registered Office : Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road Andheri (East), Mumbai 400093, India  
T: + 912266917000 | Fax: + 912266917001  
Corporate ID No: L27020MH1958PLC01238

**Ground Water Level Monitoring Report in and around the Coal Mine Area  
(From Oct 2020 to Dec 2020)**

Sr. No.	Location	Types of Structure	In Meters		
			Ground Water level (BGL) Oct. 2020	Ground Water level (BGL) Nov. 2020	Ground Water level (BGL) Dec. 2020
1	Bankheta (Near HIL Office)	Borewell/AWLR	4.64	8.69	10.28
2	Banjikhol (Near Office)	Borewell/AWLR*	22.96	23.52	23.18
3	Milupara (Near Office)	Borewell/AWLR*	7.95	9.30	10.30
4	HIL Staff Quarter	Borewell/AWLR	3.64	3.94	4.31
5	Milupara Village (PHC-HIL)	Dugwell	1.10	4.40	4.54
6	Sakta Village (Near Primary School)	Dugwell	2.05	2.70	3.31
7	Sidarpara Village (Near Primary School)	Dugwell	5.34	7.90	8.59
8	Beljor Village	Dugwell	4.06	6.00	6.08

(AWLR\* - Automatic Water level recorder under maintenance)





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer:		REPORT NO	UES/TR/20-21/03143		
TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.		LAB REF NO	UES/20-21/W/02790		
		DATE OF SAMPLING	24/11/2020		
		DATE OF RECEIPT	25/11/2020		
		DATE OF REPORT	03/12/2020		
		DATE OF ANALYSIS	START:26/11/2020	END:03/12/2020	
		<b>SAMPLE DETAILS</b>			
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANKHETA MINE (PIEZOMETER) AWLR		SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST	
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR	

Report No.03143

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.92
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	1.2
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	128
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	79.7
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	77.5
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	2.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	32.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	22.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	10.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	8.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	2.4
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	16.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	12.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.68
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	16.4
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	1.64

AN ISO : 9001:2015 / ISO: 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY

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Report No.03113

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible Limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.12
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.





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Report No. 03113

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer
- > This is for information as the party has asked for only.

Prepared by  
*Prakash*  
03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Prakash*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----



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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03144	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,</b> <b>VILLAGE - BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/02791	
		DATE OF SAMPLING	24/11/2020	
		DATE OF RECEIPT	25/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANJIKHOL MINE (PIEZOMETER) AWLR	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B,1-39	QUANTITY RECEIVED	5 LTR	

Report No. 03144

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H*-B, 4-92	6.5-8.5	No Relaxation	6.86
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	4.2
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	138.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	86.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	84.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	38.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	66.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	28.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	16.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	11.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	16.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	22.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	2.8
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	16.2

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.78
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	N.D.
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003,	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.

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Report No. 03144

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

PREPARED BY

03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

AUTHORIZED SIGNATORY

-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492090  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03176
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/02823
		DATE OF SAMPLING	25/11/2020
		DATE OF RECEIPT	26/11/2020
		DATE OF REPORT	03/12/2020
		DATE OF ANALYSIS	START: 26/11/2020      END: 03/12/2020
SAMPLE DETAILS			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/BRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	STAFF QUARTER-RANJIKHOL PIEZOMETER (AWLR)	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X I NO. PVC CAN 1 L X I NO. PVC CAN 1 L X I NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025:(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025:(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.84
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	16.4
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	188.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	122.6
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	114.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	8.6
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	68.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	28.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	40.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	11.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.7
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	32.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-190	200	400	24.2
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	0.96
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.8



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REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.6
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.12
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4	N.D.





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REPORT NO. 03176

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. = Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for test(s) only.

*Shafiq*  
 PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Shafiq*  
 03/12/2020  
 AUTHORIZED SIGNATORY

-----End of the test report-----



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Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03177	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/02824	
		DATE OF SAMPLING	25/11/2020	
		DATE OF RECEIPT	26/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	NEAR MILUPARA MINES OFFICE PIEZOMETER -AWLR		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. -03177

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.82
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	2.8
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	168
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G,4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	104.6
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	102.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.6
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	26.0
12	Total Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	38.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	22.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	16.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	8.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	6.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-190	200	400	16.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	2.8
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
20	Sodium (as Na)	mg/Lit	APHA 22nd Ed.2012,3500-Na-B, 3-97	-	-	6.0
21	Potassium (as K)	mg/Lit	APHA 22nd Ed.2012,3500-K-B, 3-87	-	-	0.85
22	Boron (as B)	mg/Lit	APHA 22nd Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
23	Iron (as Fe)	mg/Lit	APHA 22nd Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
24	Fluoride (as F)	mg/Lit	APHA 22nd Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.12
25	Manganese (as Mn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
26	Lead (as Pb)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
27	Nickel (as Ni)	mg/Lit	APHA 22nd Ed.2012,3500-NI, 3-108	0.02	No Relaxation	N.D.
28	Zinc (as Zn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	5	15	N.D.
29	Copper (as Cu)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
30	Cadmium (as Cd)	mg/Lit	APHA 22nd Ed.2012,3500-Cd,3-105	0.003	No Relaxation	N.D.
31	Mercury (as Hg)	mg/Lit	APHA 22nd Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
32	Arsenic (as As)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
33	Selenium (as Se)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
34	Chromium (as Cr)	mg/Lit	APHA 22nd Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
35	Anionic Detergent (as MBAS)	mg/Lit	APHA 22nd Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
36	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22nd Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
37	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22nd Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
38	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
39	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH	µg/L	US EPA 508-1995	2		N.D.

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REPORT NO. -03177

**TEST REPORT**

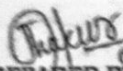
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
	(Lindane)					
7	Alpha-HCH	µg/L	US EPA 508-1995		0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: µg/Lt.: milligram per liter, N.D. - Not Detected

**REMARKS: RESULTS ARE AS ABOVE****Terms & conditions**

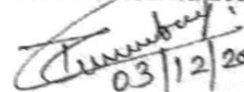
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- This is for information as the party has asked for test(s) only

PREPARED BY

  
 03/12/2020


For ULTIMATE ENVIRONMENTAL SOLUTIONS

AUTHORIZED SIGNATORY

  
 03/12/2020

End of the test report





**Ultimate**  
ENVIRONMENTAL SOLUTIONS

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Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviron@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03178
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/S, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/02825
		DATE OF SAMPLING	25/11/2020
		DATE OF RECEIPT	26/11/2020
		DATE OF REPORT	03/12/2020
		DATE OF ANALYSIS	START:26/11/2020    END:03/12/2020
SAMPLE DETAILS			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	MILUPARA VILLAGE NEAR PHC- NIL (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE    SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART 1):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39	QUANTITY RECEIVED	5 LTR

REPORT NO. - 03178

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.89
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	64.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	264
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	182
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	160
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	22.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	76.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	32.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	44.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	12.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	10.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	8.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	26.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	1.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	4.8
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.6

AN ISO 9001:2015 / ISO: 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY



HDD-272, Phase III - Near JP Chowk  
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REPORT NO. - 03178

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.11
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.28
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-NI, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH <sub>4</sub> (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.





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REPORT NO. - 03178

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after report unless otherwise agreed with customer.
- > This is for information as the party has a legal responsibility only.

PREPARED BY *[Signature]* 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*[Signature]*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----



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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03145
TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE,VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.		LAB REF NO	UES/20-21/W/02792
		DATE OF SAMPLING	24/11/2020
		DATE OF RECEIPT	25/11/2020
		DATE OF REPORT	03/12/2020
		DATE OF ANALYSIS	START: 26/11/2020 END: 03/12/2020
<b>SAMPLE DETAILS</b>			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	SAKTA VILLAGE, (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

Report No.03145

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	2.5
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.24
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.8
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	236.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4 - 69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2- 64	-	-	147.8
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	143.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2- 66	-	-	4.8
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	68.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2- 44,45	200	600	96.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	44.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	52.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	17.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	12.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	28.2
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	20.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.32
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P- C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na- B,3-97	-	-	12.6
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.86

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Report No.03145

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.18
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.10
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.



HDD-272, Phase III - Near JP Chowk  
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Report No.03145

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508- 1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508- 1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for 6 test(s) only.

 PREPARED BY 03/12/2020		For ULTIMATE ENVIROLYTICAL SOLUTIONS  03/12/2020 AUTHORIZED SIGNATORY
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-----End of the test report-----





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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03179	
TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107		LAB REF NO	UES/20-21/W/02826	
		DATE OF SAMPLING	25/11/2020	
		DATE OF RECEIPT	26/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START:26/11/2020	END:03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	SIDARPARA VILLAGE (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. - 03179

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H*-B, 4-92	6.5-8.5	No Relaxation	7.38
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.38
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	296
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	182.2
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2005	500	2000	180
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	52.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	76.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	38.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	38.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	15.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.2
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	10.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	18.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	2.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.2
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	0.9

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REPORT NO. - 03179

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.08
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-NI, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04	N.D.





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REPORT NO. - 03179

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has agreed (s) only.

*Prepared by*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS  
*Authorized Signatory*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03146	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b> <b>BANKHETA, POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/02793	
		DATE OF SAMPLING	24/11/2020	
		DATE OF RECEIPT	25/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START: 26/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	BELJOR VILLAGE (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

Report No.03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>-</sup> B, 4-92	6.5-8.5	No Relaxation	7.24
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.96
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	586
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-CI-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	362
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	355
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	7.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	156.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	188.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	102.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	88.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	40.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	21.3
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-CI-B, 4-72	250	1000	66.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	21.8
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.64
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	4.2
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B,	-	-	1.6

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Report No.03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			3-87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.24
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.

#### Microbiological Analysis

1	Total Colliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample	Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100 ml sample	Absent

#### Pesticides

1	p,p DDT	µg/L	US EPA 508-1995	1	N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1	N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1	N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1	N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1	N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2	N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04	N.D.



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Report No. 03146

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for test(s) only.

*Thakur*  
PREPARED BY 03/12/2020



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
03/12/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----





Letter No. : HIL/EC/GP-IV/5 -Q4/2020-21/26

8 April, 2021

**The DDGF (Central), Regional Office,**  
 Ministry of Environment Forests & Climate Change (MoEF & CC)  
 Regional Office, (West Central Zone)  
 Ground Floor, East Wing  
 New Secretary Building,  
 Civil Line, Nagpur - 440001.

**Sub.: Compliance of condition no. viii of Environment Clearance Letter no. - J-11015/ 8/1998-IA. II (M)**  
**Dated: - 31<sup>st</sup> August 2000 for Under Ground Mining 1.0 Million Ton/Annum Production Capacity.**

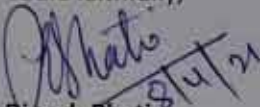
**Ref.:** Environment Clearance Letter no. - letter no. J-11015/ 8/1998-IA. II (M) Dated: - 31st August 2000.

**Dear Sir,**

With reference to above subject, we are submitting herewith the quarterly monitoring report of Ground Water Level (from Jan' 2021 to Mar' 2021) & GW Quality for the month of January 2021 - Post monsoon period of Gare Palma IV/5 Coal Mines, Hindalco Industries Limited, Village - Milupara, Tehsil - Tamnar, District - Raigarh, Chhattisgarh.

Thanking you,

Yours faithfully,

  
**Dipesh Bhatia**  
 (Vice President - GP Mines)  
 For Hindalco Industries Limited

Encl: As above

- CC: 1) Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, Raipur, Chhattisgarh.  
 2) Regional Officer, Chhattisgarh Environment Conservation Board, TV tower Road, Raigarh (CG).  
 3) The Regional Director, Regional Directorate (Central), Bhopal Central Pollution Control Board (MoEF & CC, GOI), "Parivesh Bhawan" Paryavaran Parishar, E - 5, Arera Colony Bhopal (MP), 462016  
 4) The Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, 2nd Floor, LK Corporate and Logistic Park, Dumartara, Raipur-492015  
 5) Member Secretary, Central Ground Water Authority, 18/11, Jamnagar House, Mansingh Road, New Delhi - 110011

**Hindalco Industries Limited**

Gare Palma Mines ( IV/4 & IV/5), Vill & Po: Milupara, Tehsil: Tamnar Dist: Raigarh- 496107, Chhattisgarh

T: +91 7762 228212, Website : www.hindalco.com, E mail : hindalco@adityabirla.com

Registered Office : Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road Andheri (East), Mumbai 400093, India

T: + 912266917000 | Fax: + 912266917001

Corporate ID No: L27020MH1958PLC011238

**Ground Water Level Monitoring in and around the Coal Mine Area  
(From January 2021 to March 2021)**

<b>Sr. No.</b>	<b>Location</b>	<b>Types of Structure</b>	<b>Water level (BGL) January 2021</b>	<b>Water level (BGL) February 2021</b>	<b>Water level (BGL) March 2021</b>
1	Bankheta (Near HIL Office)	Borewell	10.96	11.36	11.64
2	Banjikhola (Near Office)	Borewell	23.43	23.54	23.71
3	Milupara (Near Office)	Borewell	8.52	12.27	12.71
4	HIL Staff Quarter	Borewell	5.23	6.62	7.43
5	Milupara (PHC-HIL)	Dugwell	6.23	6.80	7.00
6	Sakta (Near Primary School)	Dugwell	3.90	4.10	4.32
7	Sidarpara (Primary School compound)	Dugwell	9.65	9.80	10.60
8	Beljor Village	Dugwell	7.50	7.80	8.00





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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03975	
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE, VILLAGE - BANKHETA, POST-MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03660	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START:23/01/2021	END:02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANKHETA MINE (PIEZOMETER)AWLR	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.86
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	1.03
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	130.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	80.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	78.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	36.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	14.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	22.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	5.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.3
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	12.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	10.5
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.54
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.3
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	1.05

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY



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Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.13
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.





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Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508- 1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508- 1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

#### REMARKS: RESULTS ARE AS ABOVE

##### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

 PREPARED BY 02/02/2021		For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03976
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA – IV/4, COAL MINE,</b> <b>VILLAGE – BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03661
		DATE OF SAMPLING	22/01/2021
		DATE OF RECEIPT	23/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START: 23/01/2021    END: 02/02/2021
SAMPLE DETAILS			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	BANJIKHOL MINE (PIEZOMETER) AWLR	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B,1-39	QUANTITY RECEIVED	5 LTR

Report No. 03976

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.84
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	4.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	142.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	94.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	92.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	34.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	68.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	32.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	36.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	12.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	8.7
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	14.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	20.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	3.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.2

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Report No. 03976

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.68
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	N.D.
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003,	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.

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Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Report No. 03976

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (C/C/S) only.

 02/02/2021 <b>PREPARED BY</b>	 <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b> (P) 02/02/2021	For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  02/02/2021 <b>AUTHORIZED SIGNATORY</b>
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-----End of the test report-----





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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04012
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03697
		DATE OF SAMPLING	22/01/2021
		DATE OF RECEIPT	23/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START:23/01/2021      END:02/02/2021
		<b>SAMPLE DETAILS</b>	
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	NEAR MILUPARA MINES OFFICE PIEZOMETER -AWLR	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE <b>SEALED</b>	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.79
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.1
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	172.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G,4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	106.5
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	104.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	48.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	34.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	14.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	13.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.4
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	8.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-190	200	400	14.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	2.4
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.

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REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
20	Sodium (as Na)	mg/Lit	APHA 22ndEd.2012,3500-Na-B, 3-97	-	-	6.2
21	Potassium (as K)	mg/Lit	APHA 22nd Ed.2012,3500-K-B, 3-87	-	-	0.78
22	Boron (as B)	mg/Lit	APHA 22nd Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
23	Iron (as Fe)	mg/Lit	APHA 22nd Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
24	Fluoride (as F)	mg/Lit	APHA 22nd Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
25	Manganese (as Mn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
26	Lead (as Pb)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
27	Nickel (as Ni)	mg/Lit	APHA 22nd Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
28	Zinc (as Zn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	5	15	N.D.
29	Copper (as Cu)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
30	Cadmium (as Cd)	mg/Lit	APHA 22nd Ed.2012,3500-Cd,3-105	0.003	No Relaxation	N.D.
31	Mercury (as Hg)	mg/Lit	APHA 22nd Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
32	Arsenic (as As)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
33	Selenium (as Se)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
34	Chromium (as Cr)	mg/Lit	APHA 22nd Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
35	Anionic Detergent (as MBAS)	mg/Lit	APHA 22nd Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
36	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22nd Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
37	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22nd Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
38	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
39	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH	µg/L	US EPA 508-1995	2		N.D.

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REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
	(Lindane)					
7	Alpha-HCH	µg/L	US EPA 508-1995		0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected

#### REMARKS: RESULTS ARE AS ABOVE

##### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only

 PREPARED BY 02/02/2021	 For ULTIMATE ENVIROLYTICAL SOLUTIONS	 AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----



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Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04011	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03696	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	STAFF QUARTER-BANJIKHOL PIEZOMETER (AWLR)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

REPORT NO. 04011

<b>TEST REPORT</b>						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025:(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025:(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.74
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	15.3
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	192.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	124.4
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	116.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	8.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	70.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	24.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	28.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-100	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	0.92
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	7.6

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.2
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-NI, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gemme-HCH (Lindene)	µg/L	US EPA 500 1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.

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REPORT NO. 04011

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (it/s) only.

 02/02/2021 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  02/02/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----





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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04013	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03698	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
		<b>SAMPLE DETAILS</b>		
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTB. 21-AUG-2020
CUSTOMER SAMPLE ID	MILUPARA VILLAGE NEAR PHC- HIL (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39		QUANTITY RECEIVED	5 LTR

REPORT NO - 04013

<b>TEST REPORT</b>						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.91
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	62.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	270.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	185.2
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	164.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	21.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	30.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	38.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	40.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	15.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.72
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	10.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	24.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500 NO <sub>3</sub> B,4-122	45	No Relaxation	2.3
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	5.1
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.1

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REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.09
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	o,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.

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REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratecuphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

 PREPARED BY 02/02/2021		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 02/02/2021
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End of the test report



**Ultimate**  
ENVIROLYTICAL SOLUTIONS

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03977	
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE,VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03662	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE :	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	SAKTA VILLAGE, (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No. 03977

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part 4)	5	15	2.3
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>-</sup> -B, 4-92	6.5-8.5	No Relaxation	7.31
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	239.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	148.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	144.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	4.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	70.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	98.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	42.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	56.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	16.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	13.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	22.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.30
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	11.4
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.81

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Report No.03977

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B 8D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.



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Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Report No.03977

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaaxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (test(s) only).

 02/02/2021 <b>PREPARED BY</b>		For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  02/02/2021 <b>AUTHORIZED SIGNATORY</b>
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-----End of the test report-----





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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04014	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03699	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTB. 21-AUG-2020
CUSTOMER SAMPLE ID	SIDARPARA VILLAGE (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>-</sup> -B, 4-92	6.5-8.5	No Relaxation	7.41
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.32
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	298
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	184.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	182.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	50.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	32.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	7.77
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	11.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	17.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	3.1
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.0
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	0.8

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY



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REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.16
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-100	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508 1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY





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REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

 PREPARED BY 02/02/2021	 For ULTIMATE ENVIROLYTICAL SOLUTIONS	 AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03978	
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE,VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03663	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BELJOR VILLAGE (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 3 L X 1 NO. PVC CAN 3 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03978

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.26
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.91
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	589.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	365.3
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	358.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	7.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	158.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	190.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	112.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	78.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	44.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	18.9
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	65.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	22.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.75
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	4.0





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Report No.03978

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.3
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.11
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100 ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.



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Report No.03978

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

 PREPARED BY 02/02/2021		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----





Letter No. : HIL/EC/GP-IV/5 -Q4/2020-21/26

8 April, 2021

**The DDGF (Central), Regional Office,**  
 Ministry of Environment Forests & Climate Change (MoEF & CC)  
 Regional Office, (West Central Zone)  
 Ground Floor, East Wing  
 New Secretary Building,  
 Civil Line, Nagpur - 440001.

**Sub.: Compliance of condition no. viii of Environment Clearance Letter no. - J-11015/ 8/1998-IA. II (M)**  
**Dated: - 31<sup>st</sup> August 2000 for Under Ground Mining 1.0 Million Ton/Annum Production Capacity.**

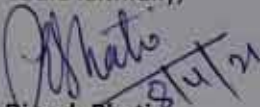
**Ref.:** Environment Clearance Letter no. - letter no. J-11015/ 8/1998-IA. II (M) Dated: - 31st August 2000.

**Dear Sir,**

With reference to above subject, we are submitting herewith the quarterly monitoring report of Ground Water Level (from Jan' 2021 to Mar' 2021) & GW Quality for the month of January 2021 - Post monsoon period of Gare Palma IV/5 Coal Mines, Hindalco Industries Limited, Village - Milupara, Tehsil - Tamnar, District - Raigarh, Chhattisgarh.

Thanking you,

Yours faithfully,

  
**Dipesh Bhatia**  
 (Vice President - GP Mines)  
 For Hindalco Industries Limited

Encl: As above

- CC: 1) Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, Raipur, Chhattisgarh.  
 2) Regional Officer, Chhattisgarh Environment Conservation Board, TV tower Road, Raigarh (CG).  
 3) The Regional Director, Regional Directorate (Central), Bhopal Central Pollution Control Board (MoEF & CC, GOI), "Parivesh Bhawan" Paryavaran Parishar, E - 5, Arera Colony Bhopal (MP), 462016  
 4) The Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, 2nd Floor, LK Corporate and Logistic Park, Dumartara, Raipur-492015  
 5) Member Secretary, Central Ground Water Authority, 18/11, Jamnagar House, Mansingh Road, New Delhi - 110011

**Hindalco Industries Limited**

Gare Palma Mines ( IV/4 & IV/5), VIL & Po: Milupara , Tehsil: Tamnar Dist: Raigarh- 496107 , Chhattisgarh

T: +91 7762 228212, Website : www.hindalco.com E mail : hindalco@adityabirla.com

Registered Office : Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road Andheri (East) , Mumbai 400093, India

T: + 912266917000 | Fax: + 912266917001

Corporate ID No: L27020MH1958PLC011238

**Ground Water Level Monitoring in and around the Coal Mine Area  
(From January 2021 to March 2021)**

<b>Sr. No.</b>	<b>Location</b>	<b>Types of Structure</b>	<b>Water level (BGL) January 2021</b>	<b>Water level (BGL) February 2021</b>	<b>Water level (BGL) March 2021</b>
1	Bankheta (Near HIL Office)	Borewell	10.96	11.36	11.64
2	Banjikhola (Near Office)	Borewell	23.43	23.54	23.71
3	Milupara (Near Office)	Borewell	8.52	12.27	12.71
4	HIL Staff Quarter	Borewell	5.23	6.62	7.43
5	Milupara (PHC-HIL)	Dugwell	6.23	6.80	7.00
6	Sakta (Near Primary School)	Dugwell	3.90	4.10	4.32
7	Sidarpara (Primary School compound)	Dugwell	9.65	9.80	10.60
8	Beljor Village	Dugwell	7.50	7.80	8.00





**Ultimate**  
ENVIRONMENTAL SOLUTIONS

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<i>Name &amp; Address Of The Customer</i>			REPORT NO	UES/TR/20-21/03975	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,</b> <b>VILLAGE - BANKHETA,</b> <b>POST-MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>			LAB REF NO	UES/20-21/W/03660	
			DATE OF SAMPLING	22/01/2021	
			DATE OF RECEIPT	23/01/2021	
			DATE OF REPORT	02/02/2021	
			DATE OF ANALYSIS	START:23/01/2021	END:02/02/2021
<b>SAMPLE DETAILS</b>					
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BANKHETA MINE (PIEZOMETER)AWLR		SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST	
SAMPLING PROCEDURE	IS: 3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR	

Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.86
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	1.03
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	130.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	80.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	78.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	36.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	14.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	22.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	5.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.3
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	12.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	10.5
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.54
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.3
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	1.05

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Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.13
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.





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Report No.03975

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508- 1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508- 1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

#### REMARKS: RESULTS ARE AS ABOVE

##### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

 02/02/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 02/02/2021 <b>AUTHORIZED SIGNATORY</b>
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-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03976
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA – IV/4, COAL MINE,</b> <b>VILLAGE – BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03661
		DATE OF SAMPLING	22/01/2021
		DATE OF RECEIPT	23/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START: 23/01/2021    END: 02/02/2021
SAMPLE DETAILS			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	BANJIKHOL MINE (PIEZOMETER) AWLR	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B,1-39	QUANTITY RECEIVED	5 LTR

Report No. 03976

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.84
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	4.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	142.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	94.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	92.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	34.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	68.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	32.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	36.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	12.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	8.7
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	14.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	20.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	3.2
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	14.2

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### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.68
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	N.D.
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003,	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.

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Report No. 03976

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4		N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994	1		N.D.
14	Ethion	µg/L	US EPA 8141A-1994	3		N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30		N.D.
16	Phorate	µg/L	US EPA 8141A-1994	2		N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-		N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-		N.D.
19	2,4-D	µg/L	US EPA 515.1-1995	30		N.D.
20	Alachlor	µg/L	US EPA 508-1995	20		N.D.
21	Atrazine	µg/L	US EPA 532-2000	2		N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3		N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-		N.D.
24	Malathion	µg/L	US EPA 8141A-1994	190		N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994	-		N.D.
26	Aldrin	µg/L	US EPA 508-1995	0.03		N.D.
27	Dieldrin	µg/L	US EPA 508-1995	0.03		N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (C/C/S) only.

 02/02/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 02/02/2021 <b>AUTHORIZED SIGNATORY</b>
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-----End of the test report-----





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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04012
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03697
		DATE OF SAMPLING	22/01/2021
		DATE OF RECEIPT	23/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START:23/01/2021      END:02/02/2021
SAMPLE DETAILS			
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	NEAR MILUPARA MINES OFFICE PIEZOMETER -AWLR	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE <b>SEALED</b>	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.79
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.1
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	172.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G,4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	106.5
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	104.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	48.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	34.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	14.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	13.6
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	3.4
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	8.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-190	200	400	14.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	2.4
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.

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REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
20	Sodium (as Na)	mg/Lit	APHA 22nd Ed.2012,3500-Na-B, 3-97	-	-	6.2
21	Potassium (as K)	mg/Lit	APHA 22nd Ed.2012,3500-K-B, 3-87	-	-	0.78
22	Boron (as B)	mg/Lit	APHA 22nd Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
23	Iron (as Fe)	mg/Lit	APHA 22nd Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
24	Fluoride (as F)	mg/Lit	APHA 22nd Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
25	Manganese (as Mn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
26	Lead (as Pb)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
27	Nickel (as Ni)	mg/Lit	APHA 22nd Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
28	Zinc (as Zn)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	5	15	N.D.
29	Copper (as Cu)	mg/Lit	APHA 22nd Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
30	Cadmium (as Cd)	mg/Lit	APHA 22nd Ed.2012,3500-Cd,3-105	0.003	No Relaxation	N.D.
31	Mercury (as Hg)	mg/Lit	APHA 22nd Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
32	Arsenic (as As)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
33	Selenium (as Se)	mg/Lit	APHA 22nd Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
34	Chromium (as Cr)	mg/Lit	APHA 22nd Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
35	Anionic Detergent (as MBAS)	mg/Lit	APHA 22nd Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
36	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22nd Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
37	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22nd Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
38	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
39	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH	µg/L	US EPA 508-1995	2		N.D.

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REPORT NO. -04012

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
	(Lindane)					
7	Alpha-HCH	µg/L	US EPA 508-1995		0.01	N.D.
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected

#### REMARKS: RESULTS ARE AS ABOVE

##### Terms & conditions

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only

 02/02/2021 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  02/02/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----



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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/04011	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03696	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	STAFF QUARTER-BANJIKHOL PIEZOMETER (AWLR)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. 04011

<b>TEST REPORT</b>						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025:(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025:(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.74
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	15.3
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	192.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	124.4
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	116.2
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	8.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	28.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	70.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	24.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	5.8
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	28.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E,4-100	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	0.92
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	7.6

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REPORT NO. 04011

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.2
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	N.D.
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-NI, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coll	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gemme-HCH (Lindene)	µg/L	US EPA 500 1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995	0.4		N.D.

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REPORT NO. 04011

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	ACCEPTABLE LIMIT FOR DRINKING WATER (IS 10500:2012)		RESULT
				Acceptable Limit	Permissible limit	
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508- 1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508- 1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (it/s) only.

 02/02/2021 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  02/02/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----





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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04013	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03698	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTB. 21-AUG-2020
CUSTOMER SAMPLE ID	MILUPARA VILLAGE NEAR PHC- HIL (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025(PART I):1987 RA 2003; APHA 22ND ED. 2012,1060-B,1-39		QUANTITY RECEIVED	5 LTR

REPORT NO - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	6.91
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	62.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	270.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	185.2
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	164.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	21.2
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	30.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	38.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	40.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	15.2
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	9.72
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	10.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	24.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500 NO <sub>3</sub> B,4-122	45	No Relaxation	2.3
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	5.1
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.1

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Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B &D, 4-84 & 87	1	1.5	0.09
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	o,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.

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REPORT NO. - 04013

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratecuphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

 PREPARED BY 02/02/2021		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 02/02/2021
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End of the test report



**Ultimate**  
ENVIROLYTICAL SOLUTIONS

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Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03977	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/4, COAL MINE,VILLAGE -</b> <b>BANKHETA, POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03662	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE :	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	SAKTA VILLAGE, (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No. 03977

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part 4)	5	15	2.3
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>-</sup> -B, 4-92	6.5-8.5	No Relaxation	7.31
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	3.0
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	239.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	148.1
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	144.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	4.1
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	70.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	98.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	42.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	56.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	16.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	13.6
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	22.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	19.6
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.30
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	11.4
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	0.81

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Report No.03977

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B 8D, 4-84 & 87	1	1.5	0.14
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.



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 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Report No.03977

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
				10	Alpha-Endosulfan	
11	Beta-Endosulfan	µg/L	US EPA 508-1995	0.4	N.D.	
12	Endosulfansulphate	µg/L	US EPA 508-1995	0.4	N.D.	
13	Monocrotophos	µg/L	US EPA 8141A-1994	1	N.D.	
14	Ethion	µg/L	US EPA 8141A-1994	3	N.D.	
15	Chloropyrifos	µg/L	US EPA 8141A-1994	30	N.D.	
16	Phorate	µg/L	US EPA 8141A-1994	2	N.D.	
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994	-	N.D.	
18	Phoratesulphone	µg/L	US EPA 8141A-1994	-	N.D.	
19	2,4-D	µg/L	US EPA 515.1-1995	30	N.D.	
20	Alachlor	µg/L	US EPA 508-1995	20	N.D.	
21	Atrazine	µg/L	US EPA 532-2000	2	N.D.	
22	Methyl parathion	µg/L	US EPA 8141A-1994	0.3	N.D.	
23	Methyl paraxone	µg/L	US EPA 8141A-1994	-	N.D.	
24	Malathion	µg/L	US EPA 8141A-1994	190	N.D.	
25	Malaaxon	µg/L	US EPA 8141A-1994	-	N.D.	
26	Aldrin	µg/L	US EPA 508-1995	0.03	N.D.	
27	Dieldrin	µg/L	US EPA 508-1995	0.03	N.D.	

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (sample) only.

 02/02/2021 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  02/02/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----





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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04014	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5, MILUPARA</b> <b>U/G COAL MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03699	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER		ORDER /REFERENCE:	M/PO/SRV/2021/0044, DTB. 21-AUG-2020
CUSTOMER SAMPLE ID	SIDARPARA VILLAGE (DUGWELL)		SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39		QUANTITY RECEIVED	5 LTR

REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>-</sup> -B, 4-92	6.5-8.5	No Relaxation	7.41
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.32
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	298
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	184.0
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	182.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	2.0
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	50.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	78.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	-	-	46.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B,3-84	-	-	32.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B,3-67	75	200	18.4
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	7.77
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	11.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	17.3
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B,4-122	45	No Relaxation	3.1
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C, 4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B, 3-97	-	-	8.0
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-	-	-	0.8

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY



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Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
			87			
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.16
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.09
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-100	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508 1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.
8	Beta-HCH	µg/L	US EPA 508-1995	0.04		N.D.
9	Delta HCH	µg/L	US EPA 508-1995	0.04		N.D.





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REPORT NO. - 04014

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D. - Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

 PREPARED BY 02/02/2021	 For ULTIMATE ENVIROLYTICAL SOLUTIONS	 AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----



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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03978	
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/4, COAL MINE,VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496107.</b>		LAB REF NO	UES/20-21/W/03663	
		DATE OF SAMPLING	22/01/2021	
		DATE OF RECEIPT	23/01/2021	
		DATE OF REPORT	02/02/2021	
		DATE OF ANALYSIS	START: 23/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	GROUND WATER	ORDER /REFERENCE:	N/PO/SRV/2021/0035, DTD. 21-AUG-2020	
CUSTOMER SAMPLE ID	BELJOR VILLAGE (DUGWELL)	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 3 L X 1 NO. PVC CAN 3 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART I): 1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

Report No.03978

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable
3	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable
4	pH	-	APHA 22 <sup>nd</sup> Ed.2012,4500-H <sup>+</sup> -B, 4-92	6.5-8.5	No Relaxation	7.26
5	Turbidity	NTU	APHA 22 <sup>nd</sup> Ed.2012,2130-B,2-13	1	5	0.91
6	Electrical Conductivity	µS/cm	IS 3025(part-14):1984, RA 2013	-	-	589.0
7	Residual Chlorine	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-G, 4-69	0.2	1	N.D.
8	Total Solid	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- B, 2-64	-	-	365.3
9	Total Dissolved Solids	mg/Lit	IS 3025(part-16):1984, RA 2006	500	2000	358.0
10	Total Suspended Solids	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2540- D, 2-66	-	-	7.3
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/Lit	IS 3025(part-23):1986, RA 2003	200	600	158.0
12	Total Hardness ( as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,2340-C, 2-44,45	200	600	190.0
13	Calcium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	-	-	112.0
14	Magnesium Hardness (as CaCO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	-	-	78.0
15	Calcium (as Ca)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ca-B, 3-67	75	200	44.8
16	Magnesium (as Mg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Mg-B, 3-84	30	100	18.9
17	Chloride (as Cl)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-Cl-B, 4-72	250	1000	65.9
18	Sulphate (as SO <sub>4</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-SO <sub>4</sub> -E, 4-190	200	400	22.4
19	Nitrate (as NO <sub>3</sub> )	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-NO <sub>3</sub> -B, 4-122	45	No Relaxation	0.75
20	Phosphate (as P)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-P-C,4-153	-	-	N.D.
21	Sodium (as Na)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Na-B,3-97	-	-	4.0





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TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
22	Potassium (as K)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-K-B, 3-87	-	-	1.3
23	Boron (as B)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-B-B, 4-25	0.5	1.0	N.D.
24	Iron (as Fe)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B,3-18	0.3	No Relaxation	N.D.
25	Fluoride (as F)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,4500-F-B & D, 4-84 & 87	1	1.5	0.11
26	Manganese (as Mn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.1	0.3	0.21
27	Lead (as Pb)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.01	No Relaxation	N.D.
28	Nickel (as Ni)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Ni, 3-108	0.02	No Relaxation	N.D.
29	Zinc (as Zn)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	5	15	N.D.
30	Copper (as Cu)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3111-B, 3-18	0.05	1.5	N.D.
31	Cadmium (as Cd)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cd, 3-105	0.003	No Relaxation	N.D.
32	Mercury (as Hg)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3112-B, 3-23	0.001	No Relaxation	N.D.
33	Arsenic (as As)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	0.05	N.D.
34	Selenium (as Se)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3114-C, 3-38	0.01	No Relaxation	N.D.
35	Chromium (as Cr)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,3500-Cr-B, 3-69	0.05	No Relaxation	N.D.
36	Anionic Detergent (as MBAS)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-C, 5-53	0.2	1.0	N.D.
37	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/Lit	APHA 22 <sup>nd</sup> Ed.2012,5540-B & C, 5-47	0.001	0.002	N.D.
38	Poly-nuclear Aromatic Hydrocarbon (PAH)	µg/Lit	APHA 22 <sup>nd</sup> Ed.2012,6440-6-93	0.0001	No Relaxation	N.D.
39	Mineral Oil	mg/Lit	IS 3025 (part-39) : 1991, RA 2003	0.5	No Relaxation	N.D.
40	Oil & Grease	mg/Lit	IS 3025 (Part 39):1991, RA 2003	-	-	N.D.
<b>Microbiological Analysis</b>						
1	Total Coliforms	MPN/100 ML	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
2	Faecal Coliform	MPN/100ml	IS:1622:1981: RA:2019	Shall not be detectable in any 100 ml sample		Absent
3	E. Coli	MPN/100ml	IS:1622:1981:RA:2019	Shall not be detectable in any 100 ml sample		Absent
<b>Pesticides</b>						
1	p,p DDT	µg/L	US EPA 508-1995	1		N.D.
2	o,p DDT	µg/L	US EPA 508-1995	1		N.D.
3	p,pDDE	µg/L	US EPA 508-1995	1		N.D.
4	p,p DDD	µg/L	US EPA 508-1995	1		N.D.
5	O,p DDD	µg/L	US EPA 508-1995	1		N.D.
6	Gamma-HCH (Lindane)	µg/L	US EPA 508-1995	2		N.D.
7	Alpha-HCH	µg/L	US EPA 508-1995	0.01		N.D.



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Report No.03978

TEST REPORT						
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT
				Acceptable Limit	Permissible limit	
8	Beta-HCH	µg/L	US EPA 508-1995		0.04	N.D.
9	Delta HCH	µg/L	US EPA 508-1995		0.04	N.D.
10	Alpha-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
11	Beta-Endosulfan	µg/L	US EPA 508-1995		0.4	N.D.
12	Endosulfansulphate	µg/L	US EPA 508-1995		0.4	N.D.
13	Monocrotophos	µg/L	US EPA 8141A-1994		1	N.D.
14	Ethion	µg/L	US EPA 8141A-1994		3	N.D.
15	Chloropyrifos	µg/L	US EPA 8141A-1994		30	N.D.
16	Phorate	µg/L	US EPA 8141A-1994		2	N.D.
17	Phoratesulphoxide	µg/L	US EPA 8141A-1994		-	N.D.
18	Phoratesulphone	µg/L	US EPA 8141A-1994		-	N.D.
19	2,4-D	µg/L	US EPA 515.1-1995		30	N.D.
20	Alachlor	µg/L	US EPA 508-1995		20	N.D.
21	Atrazine	µg/L	US EPA 532-2000		2	N.D.
22	Methyl parathion	µg/L	US EPA 8141A-1994		0.3	N.D.
23	Methyl paraxone	µg/L	US EPA 8141A-1994		-	N.D.
24	Malathion	µg/L	US EPA 8141A-1994		190	N.D.
25	Malaoxon	µg/L	US EPA 8141A-1994		-	N.D.
26	Aldrin	µg/L	US EPA 508-1995		0.03	N.D.
27	Dieldrin	µg/L	US EPA 508-1995		0.03	N.D.

Note: mg/lit.: milligram per liter, N.D.- Not Detected.

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

 PREPARED BY 02/02/2021		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 02/02/2021
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-----End of the test report-----



# Annexure - 4



**Ultimate**  
ENVIRONMENTAL SOLUTIONS

HDD-272, PHASE III- NEAR JP CHOWK,  
RING ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. - 492099  
PH - 0771 - 4027777 | email - ultimatenviro@gmail.com

Recognized By Ministry of Environment Forest & Climate Change Under EP act 1986

<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/01808
	LAB REF NO	UES/20-21/AAQM/02288
	DATE OF SAMPLING	05/10/2020 to 30/10/2020
	DATE OF RECEIPT	06/10/2020 to 31/10/2020
	DATE OF REPORT	02/11/2020
	DATE OF ANALYSIS	START:06/10/2020      END:02/11/2020

#### SAMPLE DETAILS

MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM10): 1X1 NO., FILTER PAPER (PM2.5): 1X1 NO. SO2: 30MLX1 NO. PVC BOTTLE, NO2: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

#### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	--

#### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
05.10.2020	44	20	16	22	1.0	N.D.
09.10.2020	48	26	10	18	1.6	N.D.
12.10.2020	46	20	18	26	1.0	N.D.
16.10.2020	44	28	12	20	1.2	N.D.
19.10.2020	42	24	16	18	1.8	N.D.
24.10.2020	40	20	12	26	1.0	N.D.
26.10.2020	36	28	10	20	1.6	N.D.
30.10.2020	48	26	18	26	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The use of the report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for.

PREPARED BY 02/11/2020		For ULTIMATE ENVIRONMENTAL SOLUTIONS 02/11/2020 AUTHORIZED SIGNATORY
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End of the test report





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Ph = 0771 - 4027777 | Email - ultimatenwro@gmail.com

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<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		REPORT NO	UES/TR/20-21/03154	
		LAB REF NO	UES/20-21/AAQM/02801	
		DATE OF SAMPLING	02/11/2020 to 29/11/2020	
		DATE OF RECEIPT	03/11/2020 to 30/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START:03/11/2020	END:03/12/2020
<b>SAMPLE DETAILS</b>				
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA			
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST	
SAMPLING PROCEDURE	AS PER METHOD REFERENCE			
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM10): 1X1 NO., FILTER PAPER (PM2.5): 1X1 NO. SO2: 30MLX1 NO. PVC BOTTLE, NO2: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER; 1X1 NO.			

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-1	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-1	80
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-1	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-1	80
Carbon Monoxide (CO)*	IS 5182 (Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	—

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
02.11.2020	40	20	10	18	1.0	N.D.
05.11.2020	44	22	14	20	1.0	N.D.
09.11.2020	42	26	10	18	0.8	N.D.
12.11.2020	38	20	12	22	1.2	N.D.
16.11.2020	42	28	08	20	1.0	N.D.
19.11.2020	36	22	10	24	1.2	N.D.
23.11.2020	40	20	12	18	0.8	N.D.
29.11.2020	48	24	06	20	0.6	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for purification, arbitration or as legal document is not valid.
- Test sample will be retained for 15 days after receipt of the report unless otherwise agreed.
- This is for information as the party has asked for.

 PREPARED BY 03/12/2020		For ULTIMATE ENVIRONMENTAL SOLUTIONS  03/12/2020 AUTHORIZED SIGNATORY
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End of the test report.....



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03545
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/03192
		DATE OF SAMPLING	01/12/2020 to 28/12/2020
		DATE OF RECEIPT	02/12/2020 to 29/12/2020
		DATE OF REPORT	02/01/2021
		DATE OF ANALYSIS	START: 03/12/2020      END: 02/01/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SNV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM10): 1X1 NO., FILTER PAPER (PM2.5): 1X1 NO. SO2: 30MLX1 NO. PVC BOTTLE, NO2: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-1	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	—

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.12.2020	42	22	8	16	0.6	N.D.
07.12.2020	46	24	10	22	0.8	N.D.
12.12.2020	44	28	8	20	0.6	N.D.
14.12.2020	40	22	12	24	1.0	N.D.
19.12.2020	44	26	10	28	1.1	N.D.
21.12.2020	48	20	8	20	1.0	N.D.
26.12.2020	42	24	12	26	1.4	N.D.
28.12.2020	46	28	8	18	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be returned for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test.

 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 <b>AUTHORIZED SIGNATORY</b>
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End of the test report.....





HDD-272, Phase III - Near JP Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer: <b>TO,                  HINDALCO INDUSTRIES LIMITED, GARE                  PALMA - IV/5, MILUPARA U/G COAL                  MINE,VILLAGE - MILUPARA,                  BLOCK-TAMNAR,                  DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/03989
	LAB REF NO	UES/20-21/AAQM/03674
	DATE OF SAMPLING	04/01/2021 to 29/01/2021
	DATE OF RECEIPT	05/01/2021 to 30/01/2021
	DATE OF REPORT	02/02/2021
	DATE OF ANALYSIS	START: 05/01/2021      END: 02/02/2021

SAMPLE DETAILS			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/ERV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM10): 1X1 NO., FILTER PAPER (PM2.5): 1X1 NO. SO2: 30MLX1 NO. PVC BOTTLE, NO2: 30MLX1 NO. PVC BOTTLE NUBBER BUBBLER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	--

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
04.01.2021	38	18	08	16	0.8	N.D.
08.01.2021	42	20	12	18	0.6	N.D.
11.01.2021	40	24	08	16	1.0	N.D.
15.01.2021	36	18	10	20	1.0	N.D.
18.01.2021	40	26	12	18	1.1	N.D.
22.01.2021	38	20	08	22	1.0	N.D.
25.01.2021	42	18	10	16	0.6	N.D.
29.01.2021	46	22	08	18	0.8	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- The report for publication, arbitration or in legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above report.

PREPARED BY  02/02/2021	 For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	AUTHORIZED SIGNATORY  02/02/2021
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End of the test report.....



HDD-272, Phase III - Near JP Chowk  
 Ring Road No. 2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address of the Customer		REPORT NO	UES/TR/20-21/04610
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/RAQM/04302
		DATE OF SAMPLING	01/02/2021 to 26/02/2021
		DATE OF RECEIPT	02/02/2021 to 27/02/2021
		DATE OF REPORT	02/03/2021
		DATE OF ANALYSIS	START: 02/02/2021      END: 02/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD, 21-AGO-2020
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FLYER PAPER (PM10): LXI NO., FILTER PAPER (PM2.5): LXI NO. SO2: 30MLXI NO. PVC BOTTLE, NO2: 30MLXI NO. PVC BOTTLE RUBBER BLADDER: LXI NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1993, RA 2003	4.0
Mercury (Hg)	EPA Method 10-S	--

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.02.2021	40	20	10	18	1.0	N.D.
05.02.2021	44	22	14	20	0.8	N.D.
08.02.2021	42	26	10	18	1.1	N.D.
12.02.2021	38	20	12	22	1.2	N.D.
15.02.2021	42	28	14	20	1.4	N.D.
19.02.2021	40	22	08	24	1.1	N.D.
22.02.2021	44	20	12	18	0.8	N.D.
26.02.2021	48	24	10	20	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- The report for publication, certification or as legal document is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above period only.

 PREPARED BY 02/03/2021		For ULTIMATE ENVIRONMENTAL SOLUTIONS  AUTHORIZED SIGNATORY 02/03/2021
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End of the test report





HDD-272, Phase III - Near JP Chowk  
Ring Road No. 2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email - ultimatenviro@gmail.com

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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/05027
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/04115
		DATE OF SAMPLING	01/03/2021 to 26/03/2021
		DATE OF RECEIPT	02/03/2021 to 27/03/2021
		DATE OF REPORT	01/04/2021
		DATE OF ANALYSIS	START: 02/03/2021    END: 31/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	MAIN OFFICE AREA, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (HNO <sub>3</sub> ): 1X1 NO., FILTER PAPER (PM2.5): 1X1 NO. SO2: 30MLX1 NO. PVC BOTTLE, NO2: 30MLX1 NO. PVC BOTTLE RUBBER BUBBLER: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-1	—

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.03.2021	44	24	08	20	1.2	N.D.
05.03.2021	46	20	12	22	1.0	N.D.
08.03.2021	44	24	06	18	1.2	N.D.
12.03.2021	40	26	08	24	1.0	N.D.
15.03.2021	46	20	12	22	1.1	N.D.
19.03.2021	42	22	06	18	1.2	N.D.
22.03.2021	48	18	10	16	0.8	N.D.
26.03.2021	42	22	08	22	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

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- Test samples will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the report does not constitute an offer with respect to any services.

 01/04/2021 PREPARED BY		 01/04/2021 AUTHORIZED SIGNATORY
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End of the test report



HDD-272, PHASE III- NEAR JP CHOWK,  
RING ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. -492099.  
PH - 0771 - 4027777 | email - ultimatenviro@gmail.com

Recognized By Ministry of Environment Forest & Climate Change Under EP act 1986

Name & Address Of The Customer <b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/01809	
	LAB REF NO	UES/20-21/AAQM/02289	
	DATE OF SAMPLING	05/10/2020 to 30/10/2020	
	DATE OF RECEIPT	06/10/2020 to 31/10/2020	
	DATE OF REPORT	02/11/2020	
	DATE OF ANALYSIS	START: 06/10/2020	END: 02/11/2020

#### SAMPLE DETAILS

MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	STAFF QUARTER, MILUPARA		
PERIOD OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO.		
CONTAINER/PACKING	SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

#### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	--

#### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
05.10.2020	34	24	16	28	0.8	N.D.
09.10.2020	38	28	14	22	1.0	N.D.
12.10.2020	36	22	16	26	1.2	N.D.
16.10.2020	38	28	8	24	1.1	N.D.
19.10.2020	30	22	10	18	1.2	N.D.
24.10.2020	42	26	16	30	0.6	N.D.
26.10.2020	44	26	10	18	1.0	N.D.
30.10.2020	46	18	14	24	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The use of the report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for (to be used) only.

Prepared By  02/11/2020 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  02/11/2020 AUTHORIZED SIGNATORY
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End of the test report





HDD-272, Phase III - Near JP Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph - 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		REPORT NO	URS/TR/20-21/03155	
		LAB REF NO	URS/20-21/AAQM/02802	
		DATE OF SAMPLING	02/11/2020 to 29/11/2020	
		DATE OF RECEIPT	03/11/2020 to 30/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START:03/11/2020	END:03/12/2020
SAMPLE DETAILS				
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD, 21-AUG-2020	
SAMPLING LOCATION	STAFF QUARTER, MILUPARA			
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST	
SAMPLING PROCEDURE	AS PER METHOD REFERENCE			
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.			

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1993, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	-

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
02.11.2020	32	22	10	20	0.8	N.D.
05.11.2020	34	26	08	22	1.0	N.D.
09.11.2020	36	20	14	26	0.8	N.D.
12.11.2020	38	24	12	24	1.0	N.D.
16.11.2020	42	28	08	26	1.2	N.D.
19.11.2020	46	22	10	28	1.2	N.D.
23.11.2020	40	24	12	18	0.8	N.D.
29.11.2020	36	22	14	26	0.6	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- The report for publication, certification or legal document is valid.
- Test sample will be retained for 15 days after receipt of the report.
- It is for information on the part; but asked for allow the sample.

 PREPARED BY 03/12/2020	 For ULTIMATE ENVIRONMENTAL SOLUTIONS  AUTHORIZED SIGNATORY 03/12/2020
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End of the test report.....



HDD-372, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03546
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	URS/20-21/AAQM/03193
		DATE OF SAMPLING	01/12/2020 to 28/12/2020
		DATE OF RECEIPT	02/12/2020 to 29/12/2020
		DATE OF REPORT	02/01/2021
		DATE OF ANALYSIS	START: 03/12/2020      END: 02/01/2021
		<b>SAMPLE DETAILS</b>	
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	STAFF QUARTER, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30ML1 NO. PVC BOTTLE, NO <sub>2</sub> : 30ML1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

#### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	--

#### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.12.2020	34	28	8	18	1.0	N.D.
07.12.2020	36	22	10	26	0.8	N.D.
12.12.2020	38	26	16	20	0.6	N.D.
14.12.2020	42	20	10	22	0.8	N.D.
19.12.2020	48	24	12	28	1.0	N.D.
21.12.2020	40	28	10	22	1.0	N.D.
26.12.2020	46	20	8	20	1.2	N.D.
28.12.2020	38	26	12	24	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, alteration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of this report unless otherwise agreed with customer.
- This is for information as this entry has added for drive test01.com/india

 02/01/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  02/01/2021 <b>AUTHORIZED SIGNATORY</b>
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End of the test report.....





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of Client		REPORT NO	UES/TR/20-21/03990
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/03675
		DATE OF SAMPLING	04/01/2021 to 29/01/2021
		DATE OF RECEIPT	05/01/2021 to 30/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START:05/01/2021    END:02/02/2021
		<b>SAMPLE DETAILS</b>	
SAMPLING LOCATION	STAFF QUARTER, MILUPARA	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLANKET: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2003, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	--

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
04.01.2021	30	20	08	18	0.6	N.D.
08.01.2021	32	24	06	20	0.8	N.D.
11.01.2021	34	18	12	24	0.6	N.D.
15.01.2021	36	22	10	22	1.1	N.D.
18.01.2021	40	26	06	24	1.0	N.D.
22.01.2021	44	20	08	26	0.8	N.D.
25.01.2021	38	22	10	16	0.6	N.D.
29.01.2021	34	20	12	24	0.8	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, circulation or its legal display is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above tests only.

 PREPARED BY	 For ULTIMATE ENVIROLYTICAL SOLUTIONS	 AUTHORIZED SIGNATORY
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End of the test report.....



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph. 0771 - 4027777 | Email - ultimatenviro@gmail.com

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Name & Address of the Customer:		REPORT NO	UES/TR/20-21/04611
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/04303
		DATE OF SAMPLING	01/02/2021 to 26/02/2021
		DATE OF RECEIPT	02/02/2021 to 27/02/2021
		DATE OF REPORT	02/03/2021
		DATE OF ANALYSIS	START: 02/02/2021      END: 02/03/2021
SAMPLE DETAILS			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	N/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	STAFF QUARTER, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 8): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	-

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.02.2021	32	22	10	20	0.8	N.D.
05.02.2021	34	26	08	22	1.0	N.D.
08.02.2021	36	20	14	26	0.8	N.D.
12.02.2021	30	24	12	24	1.0	N.D.
15.02.2021	42	28	09	26	1.1	N.D.
19.02.2021	46	22	10	28	1.0	N.D.
22.02.2021	40	24	12	18	0.8	N.D.
26.02.2021	36	22	14	26	1.1	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, circulation or as legal evidence is forbidden.
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- This is for information as the party has asked for above linked analytical.

 02/03/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 02/03/2021 <b>AUTHORIZED SIGNATORY</b>
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End of the test report





HDD-272, Phase III - Near J.P Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099.  
 Ph: 0771-4027777 | Email: ultimateenviro@gmail.com

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Name & Address Of Client/Company		REPORT NO	UES/TR/20-21/05028
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB KEY NO	UES/20-21/AAQM/04119
		DATE OF SAMPLING	01/03/2021 to 26/03/2021
		DATE OF RECEIPT	02/03/2021 to 27/03/2021
		DATE OF REPORT	01/04/2021
		DATE OF ANALYSIS	START: 02/03/2021    END: 31/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/EO/GRV/2021/0044, DDV. 21-AUG-2020
SAMPLING LOCATION	STAFF QUARTER, MILUPARA		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHIEF/INCH
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO.: 30MLX1 NO. PVC BOTTLES RUBBER BLADDER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-1	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	90
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 8): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	6.0
Mercury (Hg)	EPA Method 10-5	-

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.03.2021	34	20	08	22	1.0	N.D.
05.03.2021	39	22	06	28	1.2	N.D.
08.03.2021	40	19	10	22	1.0	N.D.
12.03.2021	35	22	12	26	1.2	N.D.
13.03.2021	44	18	10	20	1.0	N.D.
19.03.2021	48	20	14	24	1.4	N.D.
22.03.2021	42	22	10	20	1.2	N.D.
26.03.2021	38	20	16	22	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- The report for performance, arbitration or any legal dispute is voidable.
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 01/04/2021 PREPARED BY	 For ULTIMATE ENVIRONMENTAL SOLUTIONS  01/04/2021 AUTHORIZED SIGNATORY
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End of the test report



HDD-272, PHASE III- NEAR JP CHOWK,  
RING ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. - 492099  
PH - 0771 - 4827777 | email - ultimatenviro@gmail.com

Form No.: UES/ENV/08

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<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/01810
	LAB REF NO	UES/20-21/AAQM/02290
	DATE OF SAMPLING	05/10/2020 to 30/10/2020
	DATE OF RECEIPT	06/10/2020 to 31/10/2020
	DATE OF REPORT	02/11/2020
	DATE OF ANALYSIS	START:06/10/2020      END:02/11/2020

SAMPLE DETAILS			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	HIL COLONY, KONDKEL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	--

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
05.10.2020	38	24	10	24	0.8	N.D.
09.10.2020	42	28	18	22	0.6	N.D.
12.10.2020	50	22	12	16	1.0	N.D.
16.10.2020	44	26	16	24	0.8	N.D.
19.10.2020	46	20	10	22	1.0	N.D.
24.10.2020	40	30	14	24	1.2	N.D.
26.10.2020	42	26	10	18	1.0	N.D.
30.10.2020	46	20	18	22	1.1	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- > The use of the report for publication, arbitration or as legal dispute is forbidden.
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- > This is for information as the party has asked for above test only.

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End of the test report





IIDD-272, Phase III - Near JP Chowk,  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph - 0771 - 4027777 | Email - ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		REPORT NO UES/TR/20-21/03156
		LAB REF NO UES/20-21/AAQM/02803
		DATE OF SAMPLING 02/11/2020 to 29/11/2020
		DATE OF RECEIPT 03/11/2020 to 30/11/2020
		DATE OF REPORT 03/12/2020
		DATE OF ANALYSIS START: 03/11/2020    END: 03/12/2020
<b>SAMPLE DETAILS</b>		
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE
SAMPLING LOCATION	HIL COLONY, KONDHEL	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY
SAMPLING PROCEDURE	AS PER METHOD REFERENCE	LABORATORY CHEMIST
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.	

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	-

TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
02.11.2020	40	24	10	20	0.6	N.D.
05.11.2020	38	20	12	22	0.8	N.D.
09.11.2020	42	26	08	26	1.2	N.D.
12.11.2020	38	22	10	20	1.0	N.D.
16.11.2020	36	24	08	22	1.2	N.D.
19.11.2020	44	30	12	28	0.8	N.D.
23.11.2020	42	28	16	22	1.2	N.D.
29.11.2020	40	24	10	24	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

- The report for publication, circulation or any other purpose is forbidden.
- Test sample will be retained for 15 days after issue of the report. Sample disposal with the customer.
- This is for information as the party has asked for above.

PREPARED BY  03/12/2020		For ULTIMATE ENVIROLYTICAL SOLUTIONS  03/12/2020 AUTHORIZED SIGNATORY
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End of the test report.....



HDD-272, Phase III - Near JP Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph - 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03547
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/03194
		DATE OF SAMPLING	01/12/2020 to 28/12/2020
		DATE OF RECEIPT	02/12/2020 to 29/12/2020
		DATE OF REPORT	02/01/2021
		DATE OF ANALYSIS	START:03/12/2020      END:02/01/2021
		<b>SAMPLE DETAILS</b>	
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-ADG-2020
SAMPLING LOCATION	NIL COLONY, KONDREL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	—

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.12.2020	42	26	12	22	0.8	N.D.
07.12.2020	40	22	8	26	0.6	N.D.
12.12.2020	46	28	10	28	1.0	N.D.
14.12.2020	44	24	14	22	0.8	N.D.
19.12.2020	38	20	10	24	1.0	N.D.
21.12.2020	46	28	12	26	0.6	N.D.
26.12.2020	44	22	16	24	1.1	N.D.
28.12.2020	48	26	10	20	0.8	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information of the party has asked for above report.

 02/01/2021 <b>PREPARED BY</b>		 02/01/2021 <b>AUTHORIZED SIGNATORY</b>
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End of the test report.....





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer:		REPORT NO	UES/TR/20-21/03991
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/03676
		DATE OF SAMPLING	04/01/2021 to 29/01/2021
		DATE OF RECEIPT	05/01/2021 to 30/01/2021
		DATE OF REPORT	02/02/2021
		DATE OF ANALYSIS	START:05/01/2021      END:02/02/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	HIL COLONY, KONKHEL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): IXI NO., FILTER PAPER (PM <sub>2.5</sub> ): IXI NO. SO <sub>2</sub> : 30MLXI NO. PVC BOTTLE, NO.; 30MLXI NO. PVC BOTTLE RUBBER BLADDER: IXI NO.		

#### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	—

#### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
04.01.2021	38	22	08	18	0.8	N.D.
08.01.2021	36	18	10	20	0.6	N.D.
11.01.2021	40	24	06	24	1.0	N.D.
15.01.2021	36	20	08	18	1.1	N.D.
18.01.2021	38	22	06	20	1.0	N.D.
22.01.2021	42	28	10	26	0.6	N.D.
25.01.2021	40	26	14	20	0.8	N.D.
29.01.2021	38	22	08	22	1.1	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test.

 02/02/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 02/02/2021 <b>AUTHORIZED SIGNATORY</b>
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End of the test report.....



HDD-272, Phase III - Near JP Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04612
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	URS/20-21/AAQM/04304
		DATE OF SAMPLING	01/02/2021 to 26/02/2021
		DATE OF RECEIPT	02/02/2021 to 27/02/2021
		DATE OF REPORT	02/03/2021
		DATE OF ANALYSIS	START:02/02/2021      END:02/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-DEC-2020
SAMPLING LOCATION	HIL COLONY, KONDROL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO., SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO.: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, 3A 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	-

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.02.2021	38	22	08	18	0.8	N.D.
05.02.2021	36	16	10	20	0.6	N.D.
08.02.2021	40	24	06	24	1.0	N.D.
12.02.2021	36	20	08	18	1.1	N.D.
15.02.2021	38	22	06	20	1.0	N.D.
19.02.2021	42	29	10	26	0.6	N.D.
22.02.2021	40	26	14	20	0.8	N.D.
26.02.2021	38	22	08	22	1.1	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- The report for publication, arbitration or as legal evidence is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above report only.

 02/03/2021 PREPARED BY		For ULTIMATE ENVIRONMENTAL SOLUTIONS  02/03/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----





HDD-272 Phase III - Near JP Chowk  
Ring Road No-2 Kahir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TF/20-21/05029
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/04120
		DATE OF SAMPLING	01/03/2021 to 26/03/2021
		DATE OF RECEIPT	02/03/2021 to 27/03/2021
		DATE OF REPORT	01/04/2021
		DATE OF ANALYSIS	START:02/03/2021      END: 31/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DND, 21-AUG-2020
SAMPLING LOCATION	MIL COLONY, KONDHEL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): LXL NO., FILTER PAPER (PM <sub>2.5</sub> ): LXL NO. SO <sub>2</sub> : SCKLXI NO, PVC BOTTLE, NO.: SCKLXI NO. PVC BOTTLE RUBBER BLADDER: LXL NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	-

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.03.2021	40	22	08	22	1.0	N.D.
05.03.2021	38	26	12	26	0.8	N.D.
08.03.2021	42	20	10	20	1.4	N.D.
12.03.2021	38	24	08	24	1.0	N.D.
15.03.2021	40	22	10	22	1.2	N.D.
19.03.2021	44	20	08	28	0.8	N.D.
22.03.2021	46	26	12	22	1.0	N.D.
26.03.2021	40	22	10	26	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- This report for pollution, will be valid only if copy of report is submitted.
- Test sample will be retained for 15 days after issue of test report.
- This is for information as the party has asked for relevant information.

 01/04/2021 PREPARED BY		 01/04/2021 AUTHORIZED SIGNATORY
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End of the test report



HDD-272, PHASE III - NEAR JP CHOWK,  
 HUNG ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. - 492099  
 PH - 0771 - 4027777 / email - ultimatenviro@gmail.com

Recognized By Ministry of Environment Forest & Climate Change Under EP act 1986

Name & Address Of The Customer

**TO,**  
**HINDALCO INDUSTRIES LIMITED, GARE**  
**PALMA - IV/5, MILUPARA U/G COAL**  
**MINE,VILLAGE - MILUPARA,**  
**BLOCK-TAMNAR,**  
**DISTT. - RAIGARH (C.G.) 496107**

REPORT NO	UES/TR/20-21/01811	
LAB REF NO	UES/20-21/AAQM/02291	
DATE OF SAMPLING	05/10/2020 to 30/10/2020	
DATE OF RECEIPT	06/10/2020 to 31/10/2020	
DATE OF REPORT	02/11/2020	
DATE OF ANALYSIS	START:06/10/2020	END:02/11/2020

SAMPLE DETAILS

MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	ETP AREA , KONDKEL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	ERA Method IO-5	--

TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
05.10.2020	48	22	8	18	0.8	N.D.
09.10.2020	36	26	6	20	1.1	N.D.
12.10.2020	44	18	10	26	1.0	N.D.
16.10.2020	46	22	12	20	1.2	N.D.
19.10.2020	40	30	8	28	1.6	N.D.
24.10.2020	48	18	8	20	1.0	N.D.
26.10.2020	44	22	10	32	1.2	N.D.
30.10.2020	42	26	16	28	1.8	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

Terms & conditions

- > The use of the report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of the report unless otherwise agreed with customer.
- > This is for information as the party has asked for (third party) only.

 PREPARED BY 02/11/2020		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 02/11/2020
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End of the test report





HDD-272, Phase III - Near JF Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimateenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

TO, <b>HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		REPORT NO UES/TR/20-21/03157
		LAB REF NO UES/20-21/AAQM/02804
		DATE OF SAMPLING 02/11/2020 to 29/11/2020
		DATE OF RECEIPT 03/11/2020 to 30/11/2020
		DATE OF REPORT 03/12/2020
		DATE OF ANALYSIS START:03/11/2020      END:03/12/2020
<b>SAMPLE DETAILS</b>		
MONITORING FOR AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE M/EO/SRV/2021/0044, DTD. 21-AUG-2020	
SAMPLING LOCATION ETP AREA , KONDAKAL		
DURATION OF SAMPLING 24 HOURS	SAMPLE COLLECTED BY LABORATORY CHEMIST	
SAMPLE PROCEDURE AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

**Test Method and NAAQM Standard for Ambient Air Quality Monitoring**

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2006	4.0
Mercury (Hg)	EPA Method ID-5	--

**TEST REPORT**

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
02.11.2020	44	26	10	20	1.1	N.D.
05.11.2020	40	24	08	26	1.2	N.D.
09.11.2020	42	22	12	20	1.4	N.D.
12.11.2020	38	28	16	22	1.0	N.D.
16.11.2020	46	22	10	28	0.8	N.D.
19.11.2020	40	26	18	20	1.6	N.D.
23.11.2020	42	20	12	26	1.2	N.D.
29.11.2020	48	18	10	24	1.4	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

**Terms & conditions**

- This report for publication, circulation or as legal document is prohibited.
- Test sample will be retained for 15 days after issue of test report unless agreed with customer.
- This is for information as the party has asked for above units.

 PREPARED BY 03/12/2020		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 03/12/2020
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-----End of the test report-----



HDD-272, Phase III - Near JP Chowk,  
Ring Road No-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ullimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03548
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/AAQM/03195
		DATE OF SAMPLING	01/12/2020 to 28/12/2020
		DATE OF RECEIPT	02/12/2020 to 29/12/2020
		DATE OF REPORT	02/01/2021
		DATE OF ANALYSIS	START:03/12/2020      END:02/01/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	ETP AREA , KONKHEL		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO., SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	—

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.12.2020	46	24	16	22	1.2	N.D.
07.12.2020	44	26	10	26	1.0	N.D.
12.12.2020	48	20	12	24	1.4	N.D.
14.12.2020	42	28	10	20	1.0	N.D.
19.12.2020	44	24	18	28	0.8	N.D.
21.12.2020	46	26	12	26	0.6	N.D.
26.12.2020	40	22	14	22	0.8	N.D.
28.12.2020	42	20	16	20	1.0	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- \* The report for publication, arbitration or as legal dispute is forbidden.
- \* Test sample will be retained for 15 days after issue of the report unless otherwise agreed with customer.
- \* This is for information as the party has asked for above test.

 PREPARED BY	 UES/20-21/AAQM/03195	For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY
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End of the test report.....





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Name &amp; Address Of The Customer</i>		<b>REPORT NO</b>	UES/TR/20-21/03992	
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		<b>LAB REF NO</b>	UES/20-21/AAQM/03677	
		<b>DATE OF SAMPLING</b>	04/01/2021 to 29/01/2021	
		<b>DATE OF RECEIPT</b>	05/01/2021 to 30/01/2021	
		<b>DATE OF REPORT</b>	02/02/2021	
		<b>DATE OF ANALYSIS</b>	START: 05/01/2021	END: 02/02/2021
<b>SAMPLE DETAILS</b>				
<b>MONITORING FOR</b>	AMBIENT AIR QUALITY MONITORING	<b>CUSTOMER REF. NO. &amp; DATE</b>	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
<b>SAMPLING LOCATION</b>	ETP AREA , KONDREL			
<b>DURATION OF SAMPLING</b>	24 HOURS	<b>SAMPLE COLLECTED BY</b>	LABORATORY CHEMIST	
<b>SAMPLING PROCEDURE</b>	AS PER METHOD REFERENCE			
<b>SAMPLE QUANTITY/PACKING</b>	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER, 1X1 NO.			

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method IO-5	--

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
04.01.2021	40	24	08	22	1.0	N.D.
08.01.2021	38	22	06	24	1.1	N.D.
11.01.2021	40	20	10	18	1.2	N.D.
15.01.2021	36	26	14	20	0.8	N.D.
18.01.2021	44	20	08	26	0.6	N.D.
22.01.2021	38	24	16	18	1.4	N.D.
25.01.2021	40	18	10	24	1.0	N.D.
29.01.2021	46	16	08	22	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above test(s) only.

 <b>PREPARED BY</b> 02/02/2021	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>	 <b>AUTHORIZED SIGNATORY</b> 02/02/2021
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-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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Notes & Columns of The Customer		REPORT NO	UES/TR/20-21/04613
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, MILUPARA U/G COAL</b> <b>MINE,VILLAGE - MILUPARA,</b> <b>BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	LAB REF NO	UES/20-21/AAQM/04305	
	DATE OF SAMPLING	01/02/2021 to 26/02/2021	
	DATE OF RECEIPT	02/02/2021 to 27/02/2021	
	DATE OF REPORT	02/03/2021	
	DATE OF ANALYSIS	START: 02/02/2021	END: 02/03/2021
SAMPLE DETAILS			
MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	M/EO/SRV/2021/0044, DTD. 21-AUG-2020
SAMPLING LOCATION	PIP AREA , KONDKEL	SAMPLE COLLECTED BY	LABORATORY CHEMIST
DURATION OF SAMPLING	24 HOURS		
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM <sub>10</sub> ): 1X1 NO., FILTER PAPER (PM <sub>2.5</sub> ): 1X1 NO., SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	--

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.02.2021	42	26	10	24	1.1	N.D.
03.02.2021	40	24	08	26	1.2	N.D.
08.02.2021	42	22	12	20	1.4	N.D.
12.02.2021	38	28	16	22	1.0	N.D.
15.02.2021	46	22	10	28	0.8	N.D.
19.02.2021	60	26	18	20	1.2	N.D.
22.02.2021	42	20	12	26	0.8	N.D.
26.02.2021	48	18	10	24	1.1	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for validation, arbitration or in legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for above mentioned.

 02/03/2021 PREPARED BY		For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  02/03/2021 AUTHORIZED SIGNATORY
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End of the test report





HDD-272 Phase III Near JP Chowk  
Ring Road No.-2, Kabil Nagar Raipur (C.G.) - 492099  
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<b>Name &amp; Address of the Customer:</b>		<b>REPORT NO</b>	UES/TR/20-21/05030
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, MILUPARA U/G COAL MINE,VILLAGE - MILUPARA, BLOCK-TAMNAR, DISTT. - RAIGARH (C.G.) 496107</b>		<b>LAB REF NO</b>	ERB/20-21/AAQM/04121
		<b>DATE OF SAMPLING</b>	01/03/2021 to 26/03/2021
		<b>DATE OF RECEIPT</b>	02/03/2021 to 27/03/2021
		<b>DATE OF REPORT</b>	01/04/2021
		<b>DATE OF ANALYSIS</b>	START:02/03/2021    END:31/03/2021
<b>SAMPLE DETAILS</b>			
<b>MONITORING FOR</b>	AMBIENT AIR QUALITY MONITORING	<b>CUSTOMER REF. NO. &amp; DATE</b>	M/PO/SRV/2021/0044, DTD. 31-AUG-2020
<b>SAMPLING LOCATION</b>	STP AREA, KONGREL		
<b>DURATION OF SAMPLING</b>	24 HOURS	<b>SAMPLE COLLECTED BY</b>	LABORATORY CHEMIST
<b>SAMPLING PROCEDURE</b>	AS PER METHOD REFERENCE		
<b>SAMPLE QUANTITY/PACKAGE</b>	FILTER PAPER (PM <sub>10</sub> ): LKI NO., FILTER PAPER (PM <sub>2.5</sub> ): LKI NO. SO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE, NO <sub>2</sub> : 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: LKI NO.		

### Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM <sub>10</sub> )	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns (PM <sub>2.5</sub> )	CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO <sub>2</sub> )	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182 (Part 10): 1999, RA 2003	4.0
Mercury (Hg)	EPA Method 10-5	—

### TEST REPORT

Date of Sampling	PM <sub>10</sub> µg/m <sup>3</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup>	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO* mg/m <sup>3</sup>	Hg ng/m <sup>3</sup>
01.03.2021	44	22	12	26	1.0	N.D.
05.03.2021	42	20	10	22	1.1	N.D.
08.03.2021	48	24	14	26	0.9	N.D.
12.03.2021	40	26	12	22	1.1	N.D.
15.03.2021	44	20	08	20	0.8	N.D.
19.03.2021	42	28	12	24	1.2	N.D.
22.03.2021	48	22	14	28	1.0	N.D.
26.03.2021	46	20	12	22	1.2	N.D.

Remarks: \* Duration of sampling for CO - 1 Hour, N.D. - Not Detected

#### Terms & conditions

- The report for analytical activities or as legal evidence is valid only if approved with customer.
- Test sample will be retained for 75 days after issue of test report.
- This is for information as the user has agreed for drive haulage only.

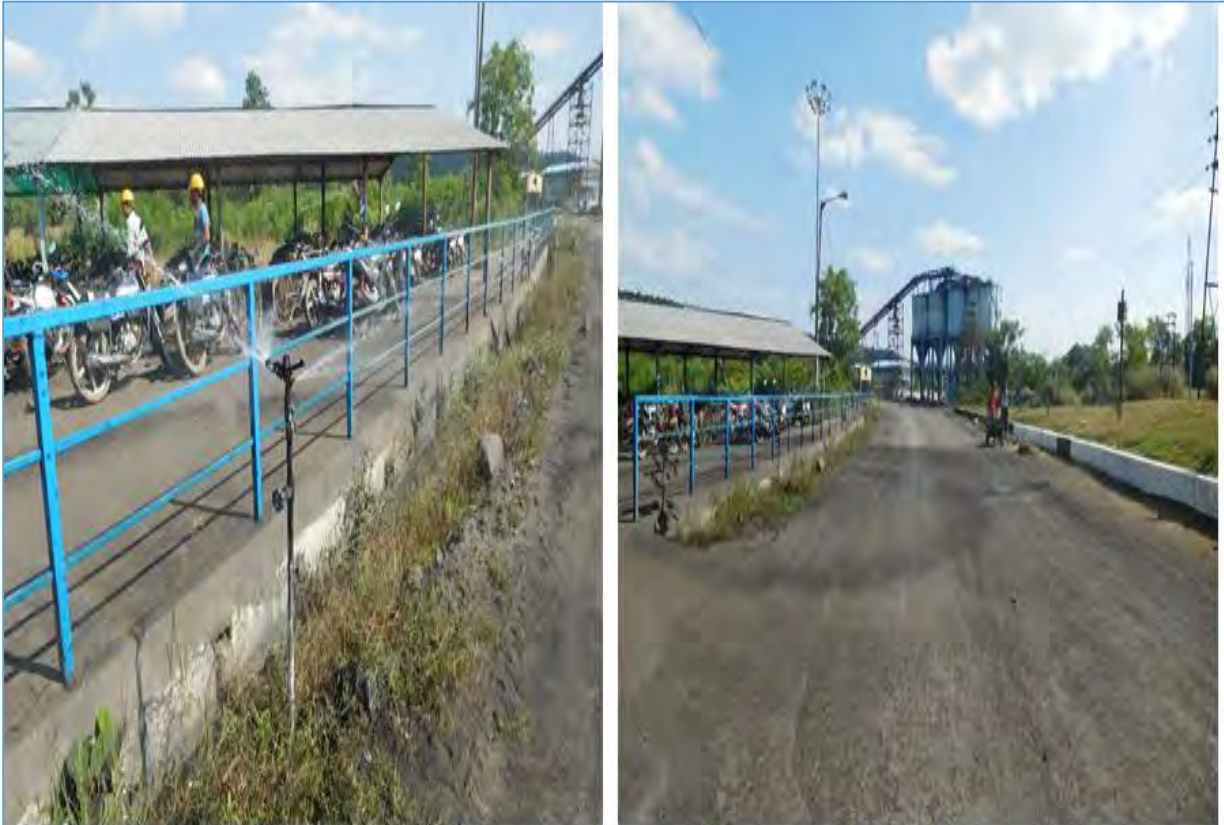
 01/04/2021 <b>PREPARED BY</b>	 <b>For ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  01/04/2021 <b>AUTHORIZED SIGNATORY</b>
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~~End of the test report~~

# Annexure – 4A



**Annexure No. – 4A**  
**Photographs of fixed type of water sprinklers at GP IV/5 Coal Mines**



**Fixed type of water sprinklers (Kondkel)**





**Fixed type of water sprinklers (Kondkel)**





**Fixed type of water sprinklers (Milupara Mine office gate)**

# Annexure - 5





**Ultimate**  
ENVIROLYTICAL SOLUTIONS

HDD-272, PHASE III - NEAR JP CHOWK,  
RING ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. - 492099  
PH - 0771 - 4025777 | email - ultimatenviro@gmail.com

Phone No: 0771-4025777

Recognized By Ministry of Environment Forest & Climate Change Under EP act 1986

<b>Name &amp; Address Of The Customer:</b> <b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED, GARE</b> <b>PALMA - IV/5, COAL MINE,</b> <b>VILLAGE - BANKHETA,</b> <b>POST -MILUPARA,</b> <b>DISTT. - RAIGARH (C.G.) 496 107</b>	REPORT NO.	UES/TR/20-21/01822
	LAB REF NO	UES/20-21/N/02302
	DATE OF REPORT	22/10/2020
	DATE OF SAMPLING	13/10/2020 to 14/10/2020

**SAMPLE DETAILS**

MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD: 21-AUG-2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY LABORATORY CHEMIST	
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

**TEST REPORT**

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB(A)	50	32	75	70
INCLINE AREA, MILUPARA	dB(A)	52	46		
BUNKER AREA, MILUPARA	dB(A)	46	34		
DG SET AREA, KONDKEL	dB(A)	58	48		
WEIGHBRIDGE AREA, MILUPARA	dB(A)	44	32		
OFFICE AREA, KONDKEL	dB(A)	40	30		
BUNKER AREA, KONDKEL	dB(A)	56	42		

LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDARPARA VILLAGE (GOVT. SCHOOL)	dB(A)	52	40	55	45
HIL COLONY, KONDKEL	dB(A)	46	38		
HIL STAFF QUARTER, MILUPARA	dB(A)	48	36		

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- The use of the report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for.

 22/10/2020 PREPARED BY	 For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  22/10/2020 AUTHORIZED SIGNATORY
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End of the test report



HDD-272, Phase III - Near JP Chowk  
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Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03168
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496 107</b>		LAB REF NO	UES/20-21/N/02815
		DATE OF REPORT	03/12/2020
		DATE OF SAMPLING	25/11/2020 to 26/11/2020
<b>SAMPLE DETAILS</b>			
MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD: 21-AUG-2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

### TEST REPORT

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB(A)	56	42	75	70
INCLINE AREA, MILUPARA	dB(A)	62	50		
BUNKER AREA, MILUPARA	dB(A)	50	46		
DG SET AREA, KONDKEL	dB(A)	60	50		
WEIGHBRIDGE AREA, MILUPARA	dB(A)	56	48		
OFFICE AREA, KONDKEL	dB(A)	56	46		
BUNKER AREA, KONDKEL	dB(A)	62	58		
LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDHAPARA VILLAGE (GOVT. SCHOOL)	dB(A)	54	40	55	45
HIL COLONY, KONDKEL	dB(A)	46	36		
HIL STAFF QUARTER, MILUPARA	dB(A)	42	34		

**REMARKS: RESULTS ARE AS ABOVE**

*Terms & conditions*

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (N/A) only.

 <b>PREPARED BY</b> 03/12/2020		 <b>AUTHORIZED SIGNATORY</b> 03/12/2020
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-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph: 0771 - 4027777 | Email: ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03559
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496 107</b>		LAB REF NO	UES/20-21/N/03206
		DATE OF REPORT	30/12/2020
		DATE OF SAMPLING	23/12/2020 to 24/12/2020
<b>SAMPLE DETAILS</b>			
MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD: 21-AUG-2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

### TEST REPORT

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB (A)	58	48	75	70
INCLINE AREA, MILUPARA	dB (A)	64	54		
BUNKER AREA, MILUPARA	dB (A)	52	40		
DO-SET AREA, KONDKEL	dB (A)	66	56		
WEIGHBRIDGE AREA, MILUPARA	dB (A)	54	42		
OFFICE AREA, KONDKEL	dB (A)	52	48		
BUNKER AREA, KONDKEL	dB (A)	68	54		
LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDARPARA VILLAGE (GOVT. SCHOOL)	dB (A)	52	42	55	45
HIL COLONY, KONDKEL	dB (A)	48	34		
HIL STAFF QUARTER, MILUPARA	dB (A)	46	38		

**REMARKS: RESULTS ARE AS ABOVE**

#### Terms & conditions

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- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above test(s) only.

 <b>PREPARED BY</b>		For ULTIMATE ENVIROLYTICAL SOLUTIONS  <b>AUTHORIZED SIGNATORY</b>
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-----End of the test report-----



**Ultimate**  
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/04003
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496 107</b>		LAB REF NO	UES/20-21/N/03688
		DATE OF REPORT	03/02/2021
		DATE OF SAMPLING	22/01/2021 to 23/01/2021
		<b>SAMPLE DETAILS</b>	
MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD: 21-AUG-2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

### TEST REPORT

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB (A)	50	46	75	70
INCLINE AREA, MILUPARA	dB (A)	54	44		
BUNKER AREA, MILUPARA	dB (A)	48	42		
DG SET AREA, KONDKEL	dB (A)	52	46		
WEIGHBRIDGE AREA, MILUPARA	dB (A)	50	40		
OFFICE AREA, KONDKEL	dB (A)	48	44		
BUNKER AREA, KONDKEL	dB (A)	56	52		
LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDARPARA VILLAGE (GOVT. SCHOOL)	dB (A)	50	40	55	45
HIL COLONY, KONDKEL	dB (A)	44	32		
HIL STAFF QUARTER, MILUPARA	dB (A)	40	36		

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for same test(s) only.

 PREPARED BY 03/02/2021		For <b>ULTIMATE ENVIROLYTICAL SOLUTIONS</b>  AUTHORIZED SIGNATORY 03/02/2021
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-----End of the test report-----





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<b>TO,</b>		REPORT NO	UES/TR/20-21/04624
<b>HINDALCO INDUSTRIES LIMITED, GARE</b>		LAB REF NO	UES/20-21/N/04316
<b>PALMA - IV/5, COAL MINE,</b>		DATE OF REPORT	02/03/2021
<b>VILLAGE - BANKHETA,</b>		DATE OF SAMPLING	18/02/2021 to 19/02/2021
<b>POST -MILUPARA,</b>			
<b>DISTT. - RAIGARH (C.G.) 496 107</b>			
SAMPLE DETAILS			
MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DSD: 21 AUG 2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

TEST REPORT					
LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB (A)	52	44	75	70
INCLINE AREA, MILUPARA	dB (A)	50	42		
BUNKER AREA, MILUPARA	dB (A)	46	44		
DG SET AREA, KONKHEL	dB (A)	50	48		
WEIGHBRIDGE AREA, MILUPARA	dB (A)	52	42		
OFFICE AREA, KONKHEL	dB (A)	46	46		
BUNKER AREA, KONKHEL	dB (A)	54	54		
LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDHAPARA VILLAGE (GOVT. SCHOOL)	dB (A)	52	42	55	45
HIL COLONY, KONKHEL	dB (A)	42	34		
HIL STAFF QUARTER, MILUPARA	dB (A)	40	38		

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for specific test(s) only.

 02/03/2021 PREPARED BY		For ULTIMATE ENVIRONMENTAL SOLUTIONS  02/03/2021 AUTHORIZED SIGNATORY
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-----End of the test report-----



HDD-272, Phase III - Near JP Chowk  
Ring Road No -2, Kabilr Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimateenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Client's Address Or The Contaminator</i>		REPORT NO	UES/TR/20-21/05041
<b>TO, HINDALCO INDUSTRIES LIMITED, GARE PALMA - IV/5, COAL MINE, VILLAGE - BANKHETA, POST -MILUPARA, DISTT. - RAIGARH (C.G.) 496 107</b>		LAB REF NO	UES/20-21/N/04132
		DATE OF REPORT	01/04/2021
		DATE OF SAMPLING	16/03/2021 to 17/03/2021
<b>SAMPLE DETAILS</b>			
MONITORING FOR	NOISE LEVEL MONITORING	CUSTOMER REF. NO. & DATE	M/PO/SRV/2021/0044, DTD: 21-AUG-2020
SAMPLING LOCATION	INSIDE COAL MINE & OUTSIDE COAL MINE (AS DESCRIBED BELOW)		
SAMPLE RECEIVED ON	MONITORING AT	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	MANUFACTURER'S INSTRUCTION		
SAMPLE QUANTITY/PACKING	NOT APPLICABLE		

### TEST REPORT

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
OFFICE AREA, MILUPARA	dB (A)	54	48	75	70
INCLINE AREA, MILUPARA	dB (A)	48	40		
BUNKER AREA, MILUPARA	dB (A)	42	36		
DC SET AREA, KONDHEL	dB (A)	54	44		
WELDERING AREA, MILUPARA	dB (A)	56	40		
OFFICE AREA, KONDHEL	dB (A)	40	36		
BUNKER AREA, KONDHEL	dB (A)	58	52		
LOCATION	UNIT	RESULT		LIMIT (RESIDENTIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
<b>Outside Plant</b>					
SIDARPADA VILLAGE (GOVT. SCHOOL)	dB (A)	54	40	55	45
HILL COLONY, KONDHEL	dB (A)	44	38		
HILL STAFF QUARTER, MILUPARA	dB (A)	38	32		

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

 01/04/2021 <b>PREPARED BY</b>		For ULTIMATE ENVIROLYTICAL SOLUTIONS  01/04/2021 <b>AUTHORIZED SIGNATORY</b>
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.....End of the test report.....



# Annexure - 6



HDD-272, PHASE III- NEAR JP CHOWK,  
RING ROAD NO - 2, KABIR NAGAR, RAIPUR, C.G. - 492099  
PH - 0771 - 4027777 | email - ultimatenviro@gmail.com

Recognized By Ministry of Environment Forest & Climate Change Under EP act 1986

<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/01813
	LAB REF NO	UES/20-21/W/02293
	DATE OF SAMPLING	14/10/2020
	DATE OF RECEIPT	15/10/2020
	DATE OF REPORT	22/10/2020
	DATE OF ANALYSIS	START:16/10/2020    END:21/10/2020

#### SAMPLE DETAILS

SAMPLE TYPE	WASTE WATER	ORDER /REFERENCE:	M/PO/SRV/2021/0044, D.TD. 21-AUG-2020	
CONSUMER SAMPLE ID	ETP OUTLET, KONDKEL	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHEMIST
SAMPLING PROCEDURE	IS:3025 (PART 1):1987 RA 2003: APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

#### TEST REPORT

Sr. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT (PROTECTION) RULES, 1986 (SCHEDULE-VI) PART-A INLAND SURFACE WATER	RESULT
1	Colour	Hazen	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	<1
2	Odour	-	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13	Shall not exceed 3°C above the receiving water temperature	25.8
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H <sup>1</sup> -B, 4-92	5.5 to 9.0	7.28
5	Total Residual Chlorine	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-C1-G, 4-69	1.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-66	100	20.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H-C, 4-131	5.0	0.1
8	Fluoride (as F)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-B 6B, 4-84 & 87	2.0	0.2
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	0.1	N.D.
10	Zinc (as Zn)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.3
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	3.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cd, 3-105	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cr-B, 3-63	2.8	N.D.
17	Chemical Oxygen Demand (COD)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 5520-B, 5-17	250	34.0
18	Biochemical Oxygen Demand (BOD)	mg/L	IS: 3025 (Part 44):1993, RA 2003	30	4.8
19	Oil & Grease	mg/L	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS: 3025 (Part 43):1992, RA 2003	1.0	N.D.

REMARKS: mg/lit.: milligram per liter, N.D.-Not Detected.

#### Terms & conditions

- > The use of the report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for and is valid only.

Prepared by  
22/10/2020  
PREPARED BY



For ULTIMATE ENVIROLYTICAL SOLUTIONS

Authorized Signatory  
22/10/2020  
AUTHORIZED SIGNATORY

End of the test report





HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Name &amp; Address Of The Customer</i>		REPORT NO	UES/TR/20-21/03159	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/02806	
		DATE OF SAMPLING	25/11/2020	
		DATE OF RECEIPT	26/11/2020	
		DATE OF REPORT	03/12/2020	
		DATE OF ANALYSIS	START: 25/11/2020	END: 03/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	WASTE WATER	ORDER /REFERENCE :	H/PO/SKI/2021/0044, DID, 21-AGG-2020	
CUSTOMER SAMPLE ID	WTP OUTLET, NORMAL	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHHIRT
SAMPLING PROCEEDURE	IS:3025 (PART 1):1987 RA 2002/ APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR	

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT (PROTECTION) RULES, 1986 [SCHEDULE-VI] PART. A INLAND SURFACE WATER	RESULT
1	Colour	Hazen	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 4 of Annexure-1	<1
2	Odour	-	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 4 of Annexure-1	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13	shall not exceed 5°C above the receiving water temperature	25.8
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H <sup>-</sup> -B, 4-92	5.5 to 9.0	7.24
5	Total Residual Chlorine	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69	1.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-66	100	22.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-P-C, 4-152	5.0	0.2
8	Fluoride (as F)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-B 8D, 4-34 & 87	2.0	0.1
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	0.1	N.D.
10	Zinc (as Zn)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.3
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	3.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cd, 3-205	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cr-B, 3-259	2.0	N.D.
17	Chemical Oxygen Demand (COD)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 5520-B, 5-17	250	74.0
18	Biochemical Oxygen Demand (BOD)	mg/L	IS 3025 (Part 4):1993, RA 2003	30	5.8
19	Oil & Grease	mg/L	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43):1992, RA 2003	1.0	N.D.

REMARKS: mg/lit. milligram per liter, N.D.-Not Detected.

**Terms & conditions**

- > The report for publication, utilization or as legal dispute is invalid.
- > Test sample will be retained for 15 days after issue of the report. Beyond this period, the sample will be disposed with necessary permission.
- > This is for information as the party has asked for above.

 PREPARED BY	 For ULTIMATE ENVIROLYTICAL SOLUTIONS	 AUTHORIZED SIGNATORY
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End of the test report



HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		REPORT NO	UES/TR/20-21/03550	
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/03197	
		DATE OF SAMPLING	23/12/2020	
		DATE OF RECEIPT	24/12/2020	
		DATE OF REPORT	30/12/2020	
		DATE OF ANALYSIS	START: 25/12/2020	END: 30/12/2020
<b>SAMPLE DETAILS</b>				
SAMPLE TYPE	WASTE WATER	ORDER /REFERENCE :	M/PO/SRV/2021/0044, DTD. 21-AUG-2020	
CONTAINER SAMPLE ID	STP OUTLET, RONGWEL	SAMPLE CONDITION AT RECEIPT	OK	
PACKING OF SAMPLE	1 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY	CHUMIST
SAMPLING PROCEDURE	IS:3025(PART 1):1997 RA 2003/ APHA 22ND ED. 2012, 1060-B, 1-29	QUANTITY RECEIVED	5 LTR	

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT (PROTECTION) RULES, 1986 (SCHEDULE-VI) PART-A INLAND SURFACE WATER	RESULT
1	Colour	Raze n	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-5	See 6 of Annexure-1	<1
2	Odour	-	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-5	See 6 of Annexure-1	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13	Shall not exceed 5°C above the receiving water temperature 5.5 to 9.0	25.4
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H <sup>-</sup> -B, 4-92	5.5 to 9.0	7.18
5	Total Residual Chlorine	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-68	2.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-66	300	24.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-P-C, 4-153	5.0	0.3
8	Fluoride (as F)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-B 4D, 4-84 & 87	2.0	0.2
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	0.1	N.D.
10	Zinc (as Zn)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.1
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	3.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-CD, 3-105	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 5500-Cr-B, 3-69	2.0	N.D.
17	Chemical Oxygen Demand (COD)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 5620-B, 5-17	250	64.0
18	Biochemical Oxygen Demand (BOD)	mg/L	IS 3025 (Part 44):1999, RA 2003	30	4.8
19	Oil & Grease	mg/L	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 41):1992, RA 2003	1.0	N.D.

REMARKS: mg/ltr.: milligram per liter, N.D.-Not Detected.

**Terms & conditions**

- > The report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 7 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above report.

30/12/2020 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  30/12/2020 AUTHORIZED SIGNATORY
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-----End of the test report-----

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY





**Ultimate**  
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>	REPORT NO	UES/TR/20-21/03994
	LAB REF NO	UES/20-21/W/03679
	DATE OF SAMPLING	22/01/2021
	DATE OF RECEIPT	23/01/2021
	DATE OF REPORT	02/02/2021
	DATE OF ANALYSIS	START: 23/01/2021      END: 02/02/2021

SAMPLE DETAILS			
SAMPLE TYPE	WASTE WATER	ORDER /REFERENCE :	M/PO/SRV/2021/0044, DTD. 21-AUG-2020
CUSTOMER SAMPLE ID	ETP OUTLET, ROWAKEL	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY CHEMIST
SAMPLING PROCEDURE	IS: 3025 (PART 1):1987 RA 2003; APHA 22ND ED. 2012, 1060-B, 1-39	QUANTITY RECEIVED	5 LTR

TEST REPORT					
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT (PROTECTION) RULES, 1986 (SCHEDULE-VI) PART-A INLAND SURFACE WATER	RESULT
1	Colour	Haze n	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	<1
2	Odour	-	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13	Shall not exceed 5°C above the receiving water temperature	25.9
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H-1-B, 4-92	5.5 to 9.0	7.29
5	Total Residual Chlorine	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69	1.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-66	100	26.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-P-C, 4-153	5.0	0.18
8	Fluoride (as F)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-B & D, 4-84 & 97	2.0	0.12
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	0.1	N.D.
10	Zinc (as Zn)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.4
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	3.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cd, 3-105	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cr-B, 3-69	2.0	N.D.
17	Chemical Oxygen Demand (COD)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 5520-B, 5-17	250	80.0
18	Biochemical Oxygen Demand (BOD)	mg/L	IS 3025 (Part 44):1993, RA 2003	30	5.8
19	Oil & Grease	mg/L	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43):1992, RA 2003	1.0	N.D.

REMARKS: mg/lit.: milligram per liter, N.D.-Not Detected.

- Terms & conditions
- The report for publication, arbitration or as legal dispute is forbidden.
  - Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
  - This is for information as the party has asked for above test.

 02/02/2021 PREPARED BY		 02/02/2021 AUTHORIZED SIGNATORY
-------------------------------	--	--

End of the test report

AN ISO : 9001:2015 / ISO : 14001:2015 / ISO 45001:2018 CERTIFIED LABORATORY



HDD-272, Phase III - Near JP Chowk  
 Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
 Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

<i>Please Fill Address of The Customer</i>		REPORT NO	UES/TR/20-21/04615
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/5,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/04307
		DATE OF SAMPLING	18/02/2021
		DATE OF RECEIPT	19/02/2021
		DATE OF REPORT	02/03/2021
		DATE OF ANALYSIS	START: 20/02/2021    END: 24/02/2021
<b>SAMPLE DETAILS</b>			
SAMPLE TYPE	BASIC WATER	ORDER /REFERENCE-	M/PO/SEV/2021/0044
CUSTOMER SAMPLE ID	STP OUTLET, BUNDREL	SAMPLE CONDITION AT RECEIPT?	PTD. 21-AUG-2020
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALING	
SAMPLING PROCEDURE	IS:3025(PART 1):1987 RA 2003; APHA 22ND ED. 2012. 1050-B, 1-38	SAMPLE COLLECTED BY	EMPLOYEE
		QUANTITY RECEIVED	5 LTR

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT PROTECTION RULES, 1986 [SCHEDULE-VI PART-A INLAND SURFACE WATER]	RESULT
1	Colour	Haze D	APHA 22 <sup>nd</sup> Ed. 2012, 2170-B, 2-6	See 6 of Annexure-I	<1
2	Odeur	-	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-6	See 6 of Annexure-I	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-A, 2-13	Shall not exceed 5°C above the receiving water temperature	25.6
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H-0, 4-92	5.5 to 9.0	7.92
5	Total Residual Chlorine	mg/l	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69	1.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-66	100	28.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-P-C, 4-153	3.0	0.16
8	Fluoride (as F)	mg/l	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-B AD, 4-84 & H	2.0	0.10
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-16	0.1	N.D.
10	Zinc (as Zn)	mg/l	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.3
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-16	3.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cd, 3-105	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cr-B, 3-69	2.0	N.D.
17	Chemical Oxygen Demand (COD)	mg/l	APHA 22 <sup>nd</sup> Ed. 2012, 5520-B, 5-17	250	84.0
18	Biochemical Oxygen Demand (BOD)	mg/l	IS 3025 (Part 4):1997, RA 2003	30	6.7
19	Oil & Grease	mg/l	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	IS 3025 (Part 43):1992, RA 2003	1.0	N.D.

REMARKS: mg/lit.: milligram per liter, N.D.-Not Detected.

**Terms & conditions**

- The report for publication, arbitration or as legal document is forbidden.
- Test sample will be retained for 15 days after issue of test report unless communicated with customer.
- This is for information as the party has asked for abuse survey only.






PREPARED BY \_\_\_\_\_      AUTHORIZED SIGNATORY \_\_\_\_\_

End of the test report





HDD-272 Phase III - Near JP Chowk  
Ring Road No. 2, Kabir Nagar, Raipur (C.G.) - 492099.  
Ph: 0771-4027777 | Email: ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address of The Customer:		REPORT NO	UES/TR/20-21/05032
<b>TO,</b> <b>HINDALCO INDUSTRIES LIMITED,</b> <b>GARE PALMA - IV/S,</b> <b>MILUPARA U/G COAL MINE,</b> <b>VILLAGE - MILUPARA, BLOCK-TAMNAR,</b> <b>DISTT. - RAIGARH (C.G.) 496107</b>		LAB REF NO	UES/20-21/W/04123
		DATE OF SAMPLING	17/03/2021
		DATE OF RECEIPT	18/03/2021
		DATE OF REPORT	01/04/2021
		DATE OF ANALYSIS	START: 19/03/2021    END: 27/03/2021
SAMPLE DETAILS			
SAMPLE TYPE	WASTE NAME:	ORDER / PROJECT	M/PO/RRD/2021/0044, Dtd. 21-03-2021
CONTAINER SAMPLE ID	SEP OUTLET, RYDINGI	SAMPLE CONDITION AT RECEIPT	OK
PACKING OF SAMPLE	3 L X 1 NO. PVC CAN 1 L X 1 NO. PVC CAN 1 L X 1 NO. GLASS BOTTLE	SEALED	SAMPLE COLLECTED BY
SAMPLING PROCEDURE	IS 3025 (PART 2):1997 RA 2003; APHA 22ND Ed. 2012, 1060-B, 1-29	QUANTITY RECEIVED	5 LTR

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	THE ENVIRONMENT (PROTECTION) RULES, 1986 [SCHEDULE-VI] PART-A (INLAND SURFACE WATER)	RESULT
1	Colour	Hazu m	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	<1
2	Odour	-	APHA 22 <sup>nd</sup> Ed. 2012, 2120-B, 2-6	See 6 of Annexure-I	Agreeable
3	Temperature	°C	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13	Should not exceed 5°C above the receiving water temperature	25.4
4	pH	-	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H-D, 4-32	5.5 to 9.0	7.10
5	Total Residual Chlorine	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69	1.0	N.D.
6	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 2540-D, 2-56	100	22.0
7	Dissolved Phosphate (as P)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-P-C, 4-153	5.0	0.14
8	Fluoride (as F)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 4500-F-N 10, 4-84 & 87	2.0	0.08
9	Lead (as Pb)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	0.5	N.D.
10	Zinc (as Zn)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	0.1
11	Copper (as Cu)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18	5.0	N.D.
12	Cadmium (as Cd)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cd, 3-105	2.0	N.D.
13	Mercury (as Hg)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3112-H, 3-23	0.01	N.D.
14	Arsenic (as As)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.2	N.D.
15	Selenium (as Se)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3114-C, 3-38	0.05	N.D.
16	Total Chromium (as Cr)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Cr-B, 3-69	2.0	N.D.
17	Chemical Oxygen Demand (COD)	mg/L	APHA 22 <sup>nd</sup> Ed. 2012, 9520-B, 5-17	250	64.0
18	Biochemical Oxygen Demand (BOD)	mg/L	IS 3025 (Part 4):1995, RA 2003	30	4.2
19	Oil & Grease	mg/L	IS 3025 (Part 39):1991, RA 2003	10	N.D.
20	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43):1992, RA 2003	1.0	N.D.

REMARKS: mg/L - milligram per liter, N.D.-Not Detected

Terms & conditions

- This report for analytical, statistical or as legal dispute in nature.
- Test results will be released for 14 days after issue of test report unless agreed with customer.
- This is an information as the early test report for above test.

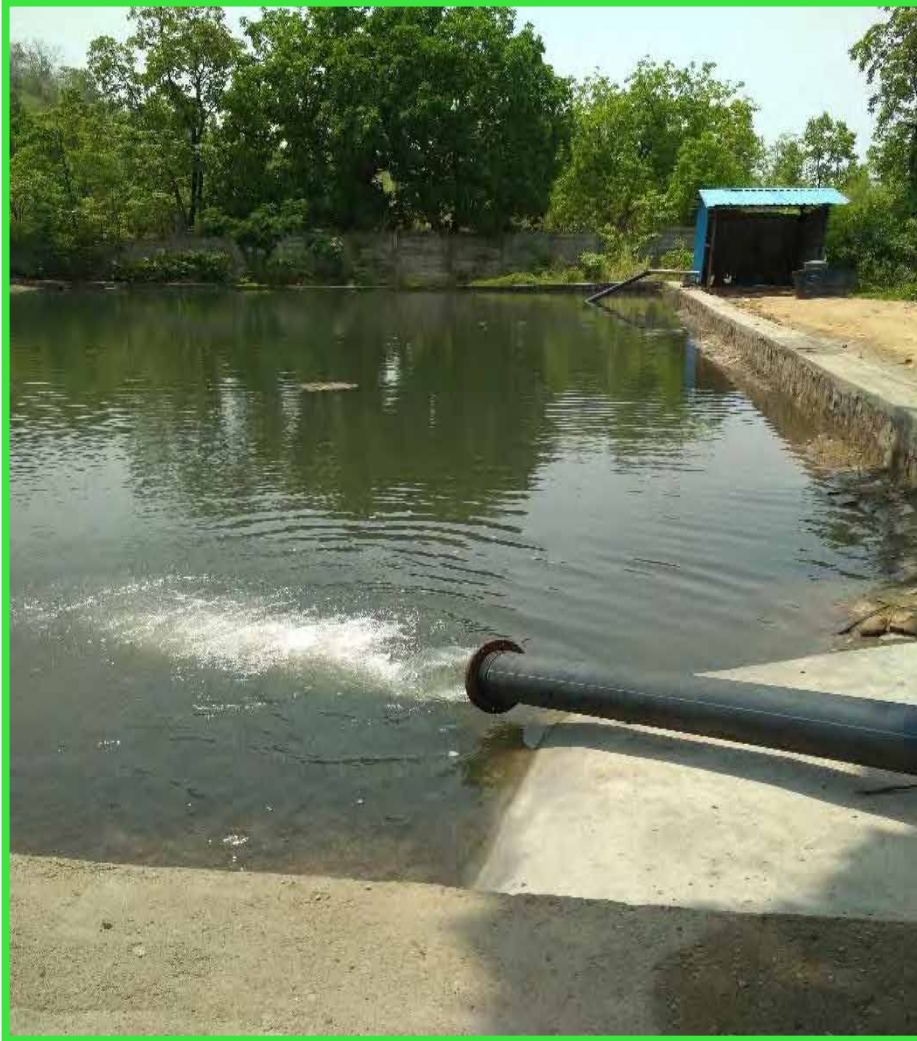
 01/04/2021 PREPARED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS  01/04/2021 AUTHORIZED SIGNATORY
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End of the test report

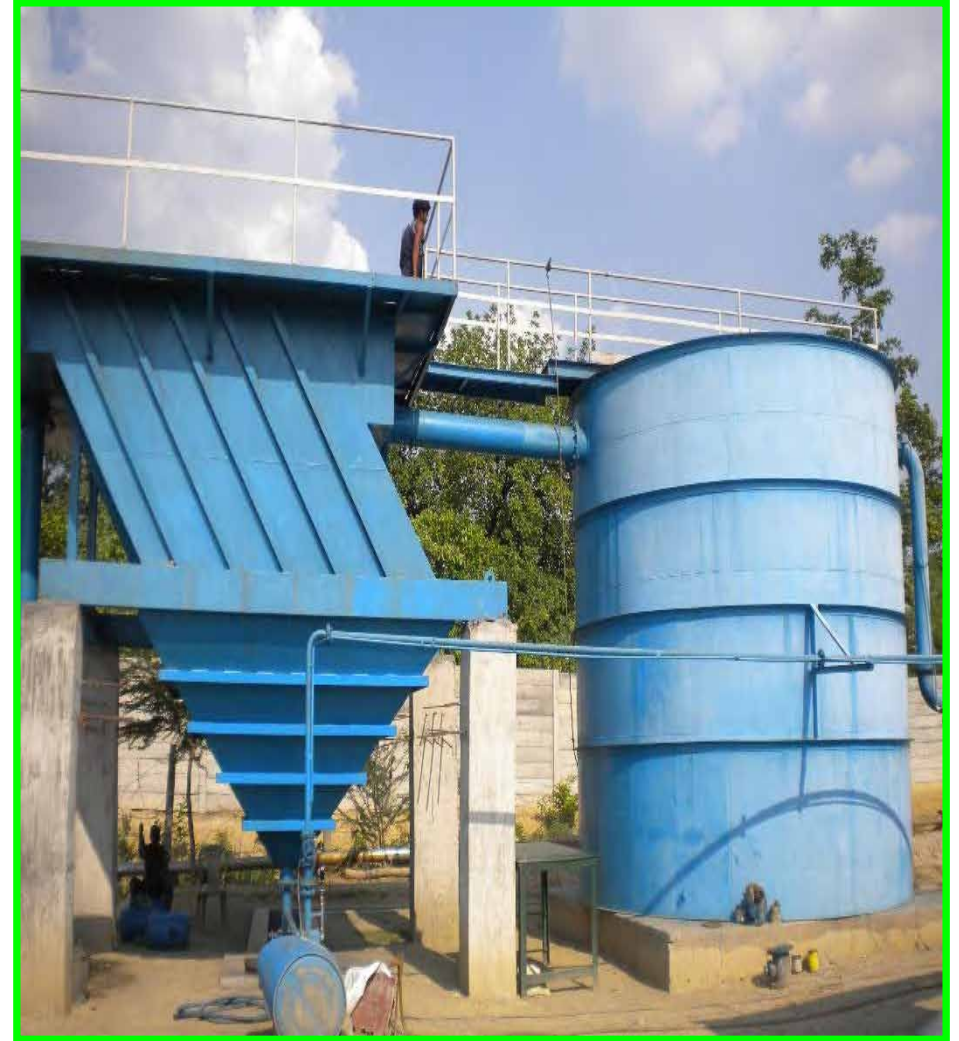
# Annexure – 6A



**Photographs of Treatment Facility at GP IV/5 Coal Mines**



**SETTLING POND NO – 5**



**Effluent Treatment Plant - Kondkel – 200 Cum /Hrs X 2**

**Annexure – 6A**  
**Photographs of Treatment Facility at GP IV/5 Coal Mines**



Water Treatment Plant (WTP) – Kondkel – 5 X 5 Cum / Hrs



Reverse Osmosis Plant (RO Plant) – Kondkel 2 x 2 Cum/Hrs



Photographs of Treatment Facility at GP IV/5 Coal Mines



Reverse Osmosis Plant (RO Plant) – Milupara – 5 Cum / Hrs



Iron Removal Plant (IRP Plant) – Milupara – 5 Cum / Hrs

# Annexure - 7





## छत्तीसगढ़ पर्यावरण संरक्षण मंडल

पर्यावास भवन, नार्थ ब्लॉक, सेक्टर-19  
नवा रायपुर, अटल नगर (छ.ग.) 492002  
ई-मेल- hocecb@gmail.com

क्रमांक 5357- मुख्या./वैज्ञा./छ.ग.प.सं.मं./2019 नवा रायपुर, अटल नगर दिनांक 24/9 /2019

प्रति,

✓ श्री अनुराग श्रीवास्तव,  
पार्टनर  
मे0 अल्टीमेट इन्वायरोलाइटिकल सौल्यूशन्स,  
272 -एच.डी.डी. फेस-3, कबीर नगर  
रिंग रोड नं. 2 रायपुर (छ.ग.)

विषय :- प्रदेश में संचालित निजी प्रयोगशाला को छ.ग. पर्यावरण संरक्षण मंडल द्वारा प्रदत्त मान्यता के संबंध में।

संदर्भ :- 1. आपका आवेदन क्रमांक UES/2019-20/RL/3033 दिनांक 27.07.2019  
2. नेशनल एकीडिटेशन बोर्ड फॉर टेस्टिंग एंड कैलिब्रेशन लेबोरेट्रीज (NABL) गुरुग्राम हरियाणा से प्राप्त प्रमाणीकरण पत्र दिनांक 01.08.2019.

----:00:----

उपरोक्त विषयांतर्गत लेख है कि मंडल मुख्यालय द्वारा आपके निजी प्रयोगशाला को मंडल द्वारा संदर्भित पत्र क्रमांक 2671 दिनांक 18.08.2017 के माध्यम से जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1974 की धारा 17 (2) एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1981 की धारा 17 (2) के अंतर्गत निजी प्रयोगशाला को मान्यता प्रदान की गई थी।

आपके द्वारा प्रस्तुत आवेदन के आधार पर किये गये निरीक्षण एवं नेशनल एकीडिटेशन बोर्ड फॉर टेस्टिंग एंड कैलिब्रेशन लेबोरेट्रीज (NABL) से प्राप्त एकीडिटेशन प्रमाणीकरण के आधार पर जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1974 की धारा 17 (2) एवं वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम 1981 की धारा 17 (2) के अंतर्गत मान्यता की वैधता दिनांक 31.07.2021 तक प्रदान की जाती है। कृपया आपकी प्रयोगशाला में प्रचालकों की अद्यतन विश्लेषण दर सूची से मंडल को अवगत कराये।

सदस्य सचिव

छत्तीसगढ़ पर्यावरण संरक्षण मंडल,  
नवा रायपुर, अटल नगर (छ.ग.)

F. No. Q-15018/07/2017-CPW  
Government of India  
Ministry of Environment, Forest and Climate Change  
(CP Division)

Agni-233, Indira Paryavaran Bhavan,  
Jor Bagh Road,  
New Delhi – 110 003.  
Dated, the 21<sup>st</sup> February, 2020

To

**M/s Ultimate Envirolutical Solution  
HDD 272, Phase-3  
Near J.P Chawk Kabir Nagar, Ring Road-2  
Raipur-492099, Chhattisgarh**

**Subject: -Recognition of M/s Ultimate Envirolutical Solutions, HDD 272, Phase-3, Near J.P Chawk Kabir Nagar, Ring Road-2, Raipur 492099, Chhattisgarh as Environmental Laboratory under the Environment (Protection) Act, 1986.**

Sir,

I am directed to refer to your application dated:01.09.2017 for recognition of your laboratory under Environment (Protection) Act, 1986. Based on the recommendations of the Expert Committee for Recognition of Environmental Laboratories in its 61<sup>st</sup> meeting held on 03.12.2019 and your acceptance of the revised terms and conditions at Annexure-III & IV of the Guidelines for recognition of Environmental Laboratories, this Ministry approves of recognition of M/s Ultimate Envirolutical Solutions, HDD 272, Phase-3, Near J.P Chawk Kabir Nagar, Ring Road-2, Raipur 492099, Chhattisgarh, as shall be notified in the Gazette of India. **Considering the current validity of mandatory accreditations/certifications of the laboratory, this shall be valid up to 25.06.2022.**

2. As sought in your aforementioned application M/s Ultimate Envirolutical Solutions, Chhattisgarh may undertake the following tests:

- (i) **Physical Tests:** Conductivity, Colour, pH, Fixed & volatile solids, Total solids, Total dissolved solids, Total suspended solids, Turbidity, Temperature, Velocity & discharge measurement of industrial effluent stream, Salinity, Settleable solids and Sludge volume index (SVI).
- (ii) **Inorganic (General & Non-metallic):** Acidity, Alkalinity, Ammonical nitrogen, Chloride, Chlorine residual, Dissolved oxygen, Fluoride, Total hardness, Total kjehldal nitrogen (TKN), Nitrite nitrogen, Nitrate nitrogen, Phosphate, Sulphate, Chlorine demand, Iodine and Silica.
- (iii) **Inorganic (Trace metals):** Boron, Cadmium, Calcium, Chromium Total, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium absorption ratio, Zinc, Arsenic, Barium, Manganese and Tin.
- (iv) **Organics (General) and Trace Organics:** Bio-chemical oxygen demand (BOD), Chemical oxygen demand (COD), Oil & grease, Phenol, Pesticide ((Organo-chlorine, Organo nitrogen-phosphorous), Poly-chlorinated biphenyl (PCB's) each, Polynuclear aromatic hydrocarbon (PAH) each and Organic Carbon (in Solid).
- (v) **Microbiological Tests:** Total Coliform, Faecal Coliform, Faecal streptococci, E. coli, Total Plate count.
- (vi) **Toxicological Tests:** Bioassay method for evaluation of toxicity using fish, Bio-accumulation, bio magnification and bio-transformation studies.
- (vii) **Biological Tests:** Macrophytic identification, Planktonic identification count and Chlorophyll.
- (viii) **Hazardous Waste:** Corrosivity, Ignibility (Flash Point) and Measurement of heavy metals/pesticides in the waste /leachate.
- (ix) **Soil/ Sludge/ Sediment and Solid Waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen available, Organic carbon/ matter (chemical method), pH, Phosphorous (available), Phosphate (ortho), Phosphate (total), Potassium, SAR in soil extract, Sodium, Soil moisture, TKN, Calorific value, Bicarbonate, Calcium, Calcium carbonate, Chloride, Bicarbonate, Calcium, Calcium carbonate, Chloride, Heavy metal, Magnesium, Nitrate, Potash (available), Sulphate and water holding capacity.



- (x) **Ambient Air/ Fugitive Emissions:** Nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>), Total Suspended particulate matter, Respirable suspended particulate matter (PM<sub>10</sub>), Ammonia, Chlorine, Fluoride, Lead.
- (xi) **Stack Gases/ Source Emission:** Particulate matter, Sulphur dioxide, Velocity & flow, Carbon dioxide, Carbon monoxide, Temperature, Oxygen, Oxides of nitrogen, Acid mist, Ammonia, Fluoride (Particulate), Fluoride(Gaseous) and Hydro-chloric acid.
- (xii) **Noise Level:** Noise level measurement (20 to 140 dba), Ambient Noise & Source-specific Noise.
- (xiii) **Meteorological:** Ambient temperature, Wind direction, Wind speed, Relative Humidity and Rainfall.
3. Further, the following analysts have been approved for recognition as Government Analysts.
- (i) Mr. Anurag K. Shrivastava  
(ii) Mr. Little Kumar Prajapati  
(iii) Mr. Pramod Kumar Choubey

4. The laboratory shall compulsorily participate in the Analytical Quality Control (AQC) exercise conducted by the Central Pollution Control Board (CPCB) at least once a year to ascertain the capability of the laboratory and analyses carried out and shall submit quarterly progress reports to this Ministry.

5. Periodic surveillance of the recognized environmental laboratory will be undertaken by this Ministry/ CPCB to assess its proper functioning, systematic operation and reliability of data generated at the laboratory.

6. It is also mandatory for the laboratory to have requisite accreditations of the NABL/ ISO 9001 and OHSAS and its renewal as per accreditation rules. This recognition is subject to such accreditations and renewal, as applicable. **The laboratory may approach this Ministry for further extension of validity of recognition after renewal of the mandatory accreditations/ certification concerned.** Such application for extension of validity may be submitted to this Ministry in due advance, preferably before 6 months.

7. The laboratory should compulsorily follow the accepted Terms & Conditions. In case of serious non-compliance of any of the Terms and Conditions, the laboratory may be black-listed for a minimum period of two years and civil/ criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,



(Dr. Susan George K.)  
Scientist 'D'

Tel. No. 011-24695327

Email: susan.george@nic.in

Copy to:

1. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, New Delhi – 110032.
2. Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhawan, North Block, Sector-19, Atal Nagar, Dist-Raipur, Chattisgarh.
3. Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur-440001.
4. Director, IT Division, MoEF&CC, New Delhi-110003; for uploading on MoEF&CC website



**National Accreditation Board for  
Testing and Calibration Laboratories**

(A Constituent Board of Quality Council of India)



## **CERTIFICATE OF ACCREDITATION**

**ULTIMATE ENVIROLYTICAL SOLUTIONS**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

**"General Requirements for the Competence of Testing &  
Calibration Laboratories"**

for its facilities at

**HDD 272, PHASE-III, KABIR NAGAR, RAIPUR, CHHATTISGARH, INDIA**

in the field of

**TESTING**

Certificate Number: TC-6065

Issue Date: 01/08/2019

Valid Until: 31/07/2021

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Signed for and on behalf of NABL



**N. Venkateswaran**  
Chief Executive Officer



# Annexure - 8

**Environmental Expenditure Details**  
**(October 2020 to March 2021)**

**M/s Hindalco Industries Limited, Gare Palma Mines IV/5**

<b>Particulars</b>	<b>Amount (Lakh)</b>
Water Quality Management	10.36
Air Quality Management	7.17
Plantation, Green Belt Development	4.80
Others	6.89
<b>Total</b>	<b>29.22</b>