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## Ref: NBC/ED (P&T) 11060

Date: 02.05.2023

To The Member Secretary, State Pollution Control Board, ODISHA A-118, Paribesh Bhawan, Unit-Vili Bhubaneswar, 751012

Sub-Submission of ambient air quality monitoring report, ground water surface water and Noise monitoring report for CTO 2023-24 special condition compliance

Ref- i) SPCB, Odisha vide order dated 28.03.2023 granted Consent to Operate (CTO) for Utkal-D Coal Mine with validity period from 01.04.2023 up to 31.03.2024 via consent order no 2938.

#### Dear Sir,

With reference to the above CTO order special conditions, we are submitting herewith the ambient air quality monitoring report, ground water, surface water and noise monitoring report collected from UtkaI-D Coal Mine of M/s NALCO as per the CTO special condition no.18 and 19 for air monitoring and condition no 33 for Noise monitoring for kind consideration.

Thanking You,

2023

3.P.C. 180.00

Yours Faithfully, For and on behalf of NALCO

(Kalikinkar Panda) Executive Director (P&T) and Authorized Signatory

Encl- I) Ambient air quality monitoring report 2 ii) Ground water Report , iii) Surface water monitoring report iv) Noise monitoring report

Copy Submitted to-1) The Regional Officer, State Pollution Control Board , Angul, 2) IRO, MoEF Bhubaneswar

निगम कार्यालय

नेशनल एल्यूमिनियम कम्पनी लिमिटेड (भारत सरकार भा एक उद्यम)

National Aluminium Company Limited (A Government of India Enterprise) CORPORATE OFFICE

नालंको भवन, पि-1, नयापल्ली, भुवनेश्वर - 751 013, भारत Nalco Bhawan, P/1, Nayapalii,Bhubaneswar - 751 013, India फौन Telephone (EPABX) (0674) 2301988, 2301999, 2300013, 2300976, 2301550, 2303233, पेंग्सर Fax-(0674) 2201290, 2300580, 300740, 2300640 & 2300246, वेवसरह Website www.nalcoindia.com CIN: L272030R1961GOI000920





Date of Testing

:

WCS Laboratory

10.04.2023 to 15.04.2023

# MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043NIZE CIN: U725010R2010PTC011651

Quantity of Sample

Sample Condition

:

l Ltr

Good :



WCS/LQR/60		TEST RE	PORT		TC-11225
Report No.	:	WCS230402A	Issue Date	:	17.04.2023
NABL ULR No.	:	TC1122523000000042F			
Name of the Client	:	National Aluminium Company Li	mited		
Address	:				
Sampling Location	:				
Sample Description	:	Ground Water	Date of Sampling	:	07.04.2023
	:	WCS/QSP/SAMP (WATER)		£	08.04.2023
Environmental Condition	:				WCS0423W01
Sample Collected by	:		Quantity of Sample	2	1 Ltr
	Report No. NABL ULR No. Name of the Client	Report No.:NABL ULR No.:Name of the Client:Address:Sampling Location:Sample Description:Sampling Plan & Method:Environmental Condition:	Report No.:WCS230402ANABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LiAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sampling Plan & Method:WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather	Report No.:WCS230402AIssue DateNABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LimitedAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sample Description:Ground WaterDate of SamplingSampling Plan & Method:WCS/QSP/SAMP (WATER)Date of ReceivingEnvironmental Condition:Temperature 29 °C, Clear WeatherSample ID No	Report No.:WCS230402AIssue Date:NABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LimitedAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sample Description:Ground WaterSampling Plan & Method:WCS/QSP/SAMP (WATER)Environmental Condition:Temperature 29 °C, Clear Weather

	SI. No.	Parameter	Unit .	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
	1	Colour	Hazen	2	Max, 5	IS 3025 ( Part-4): 2021
	2	Odour	-	Agreeable	Agreeable	IS 3025 ( Part-5): 2018
	3	pH Value		6.716	6.5-8.5	IS 3025 ( Part-11): 2022
	4	Taste Threshold		Agreeable	Agreeable	IS 3025 ( Part-7): 2017
	5	Turbidity	NTU	0.4	ī	IS 3025 ( Part-10 ): 1984 RA 2017
	6	Total Dissolved Solid as TDS	mg/l	264	500	IS 3025 ( Part-16): 1984 RA 2017
	7	Ammonia as Total ammonia-N	mg/l	0.17	0.5	IS 3025 ( Part-34): 1988 RA 2019
	8	Calcium as Ca	mg/l	33.67	75	IS 3025 ( Part-40): 1991 RA 2019
	9	Chloride as Cl	mg/l	43.98	250	IS 3025( Part-32): 1988 RA 2019
	10	Fluoride as F	mg/l	< 0.02	1.0	APHA 23 <sup>rd</sup> Ed. (4500-F-D): 2017
	11	Iron as Fe	mg/l	0.06	1.0	IS 3025 (Part -53): 2003 RA 2019
	12	Magnesium as Mg	mg/l	1604	30	APHA 23rd Ed. (3500-Mg-B): 2017
	13	Nitrate as NO3	mg/l	24.03	45	APHA 23rd Ed. (4500-NO3-B): 2017
	14	Sulphate as SO <sub>4</sub>	mg/l	10.44	200	IS 3025 ( Part-24 Sec 1):2022
	15	Total Alkalinity as CaCO3	mg/l	125	200	IS 3025 ( Part-23): 1986 RA 2019
_	16	Total Hardness as CaCO3	mg/l	150	200	IS 3025 ( Part-21): 2009 RA 2019
	17	Total Chromium as Cr	mg/l	< 0.02	0.05	IS 3025 ( Part-52) : 2003 RA 2019
	18	Potassium as K	mg/l	4.7		IS 3025 ( Part-45): 1993 RA 2019

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Report No. : WCS230402A

19	Sodium as Na	mg/l	6.8		IS 3025 ( Part-45) : 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	-	IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	<1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faccal Coliform	MPN/ 100 ml	< 1		IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	7	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Manassain for . Authorized Signatory for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

- N.B.: • The results relate to the sample received in respect to the Parameters tested. • Liability for return of sample ceases after 7 days from the date of Test certificate.

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WCS/LQR/60

# MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

# TEST REPORT

SI.	Parameter				Requirement as per IS			-
	e of Testing	:	10.04.2023 to	o 15.04.2023	Sample Condition	:	Good	
	ple Collected by	:	WCS Labora		Quantity of Sample	:	1 Ltr	
		•	Temperature	29 °C, Clear Weather		:	WCS0423W01	
	ironmental Condition	÷		AMP (WATER)	Date of Receiving	:	08.04.2023	
	pling Plan & Method	:	Ground Wate		Date of Sampling	:	07.04.2023	
	ple Description	•		g Pond (Bore Well)				
Same	pling Location		Angul-75914					
Add	ress	:	Smelter & Po	ower (S&P) Complex				
	ne of the Client	:	National Alu	uminium Company L	imited			
	ort No.	:	WCS230402		Issue Date	:	17.04.2023	

SI. No		Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
) 24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55) : 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<u>&lt;</u> 0,1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57):2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-C1 G
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42):1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59):2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39):2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0:001	0.01	IS 3025 (Part 56):2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29):1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49):1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41):1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27):1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47):1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48):1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)

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#### Report No. : WCS230402A

42	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydro- carbons as PAH	mg/l	<0.0001	0.0001	АРНА 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022

Reviewed by (Mr. Bijaya Kumar Chahataray)

Authoriz Signatory

(Mr. Pradeept Mohapatra)

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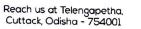




WCS/LQR/60		TEST RE	PORT		TC-11225
Report No.	:	WCS230402B	Issue Date	÷	17.04.2023
NABL ULR No.	:	TC1122523000000042F			
Name of the Client	:	National Aluminium Company Li	mited		
Address	:	Smelter & Power (S&P) Complex			
		Angul-759145, Odisha			
Sampling Location	:	Near Colony Township (Bore We	II)		
Sample Description		Ground Water	Date of Sampling	:	07.04.2023
Sampling Plan & Method	:	WCS/QSP/SAMP (WATER)	Date of Receiving	:	08.04.2023
Environmental Condition	:	Temperature 29 °C, Clear Weather	Sample ID No	:	WCS0423W02
Sample Collected by	:	WCS Laboratory	Quantity of Sample	:	1 Ltr
Date of Testing	:	10.04.2023 to 15.04.2023	Sample Condition	:	Good

SI. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
1	Colour	Hazen	2	Max, 5	IS 3025 ( Part-4): 2021
2	Odour	-	Agreeable	Agreeable	IS 3025 ( Part-5): 2018
3	pH Value	- 1	5.854	6.5-8.5	IS 3025 ( Part-11): 2022
4	Taste Threshold	-	Agreeable	Agreeable	IS 3025 ( Part-7): 2017
5	Turbidity	NTU	0.3	i	IS 3025 ( Part-10 ): 1984 RA 2017
6	Total Dissolved Solid as TDS	mg/l	84	500	IS 3025 ( Part-16): 1984 RA 2017
7	Ammonia as Total ammonia-N	mg/l	0.09	0.5	IS 3025 ( Part-34): 1988 RA 2019
8	Calcium as Ca	mg/l	6.41	75	IS 3025 ( Part-40): 1991 RA 2019
9	Chloride as Cl	mg/l	19.99	250	IS 3025( Part-32): 1988 RA 2019
10	Fluoride as F	mg/l	< 0.02	1.0	APHA 23rd Ed. (4500-F-D): 2017
11	Iron as Fe	mg/l	0.11	1.0	IS 3025 (Part -53): 2003 RA 2019
12	Magnesium as Mg	mg/l	1.458	30	APHA 23rd Ed. (3500-Mg-B): 2017
13	Nitrate as NO3	mg/l	11.30	45	APHA 23rd Ed. (4500-NO3-B): 2017
14	Sulphate as SO4	mg/l	0.61	200	IS 3025 ( Part-24 Sec 1):2022
15	Total Alkalinity as CaCO3	mg/l	10	200	IS 3025 ( Part-23): 1986 RA 2019
16	Total Hardness as CaCO3	mg/l	22	200	IS 3025 ( Part-21): 2009 RA 2019
17	Total Chromium as Cr	mg/l	< 0.02	0.05	IS 3025 ( Part-52) : 2003 RA 2019
18	Potassium as K	mg/l	4.6		IS 3025 ( Part-45): 1993 RA 2019







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Report No. : WCS230402B

19	Sodium as Na	mg/l	6.2		IS 3025 (Part-45): 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5	<del></del>	IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	< 1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	< 1		IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	2	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Manasoci for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

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# **WCS**

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# MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

#### **TEST REPORT**

Report No. Name of the Client Address	::	WCS230402B National Aluminium Company Li Smelter & Power (S&P) Complex Angul-759145, Odisha	Issue Date mited	:	17.04.2023
Sampling Location Sample Description Sampling Plan & Method Environmental Condition Sample Collected by Date of Testing	:::::::::::::::::::::::::::::::::::::::	Near Colony Township (Bore Well Ground Water WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather WCS Laboratory 10.04.2023 to 15.04.2023	Date of Sampling Date of Receiving		07.04.2023 08.04.2023 WCS0423W02 1 Ltr Good

SI. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
24	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55) : 2003 RA 2019
25	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
26	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
27	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57):2021
28	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-C1 G
29	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42):1992 RA 2019
30	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59):2006 RA 2017
31	Mineral oil	mg/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39):2021
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
33	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56):2003 RA 2019 or IS 15303*
34	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
35	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29): 1986 RA 2019
36	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49):1994 RA 2019
37	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41):1992 RA 2019
38	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27): 1986 RAA 2019
39	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47): 1994 RA 2019
40	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48):1994 RA 2019
41	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



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## Report No. : WCS230402B

42	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
43	Polynuclear aromatic hydro- carbons as PAH	mg/l	<0.0001	0.0001	Арна 6440
44	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022

taday Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory

(Mr. Pradeept Mohapatra)



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Date of Testing

## MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE

CIN: U725010R2010PTC011651

Sample Condition



Good

WCS/LQR/60		TEST RE	PORT		TC-11225
Report No.	:	WCS230402C	Issue Date	:	17.04.2023
NABL ULR No.	:	TC1122523000000042F			
Name of the Client	:	National Aluminium Company Li	mited		
Address	:	Smelter & Power (S&P) Complex			
		Angul-759145, Odisha			
Sampling Location	:	Gopiballavpur Village (Tube Wel	D		
Sample Description	:	Ground Water	Date of Sampling	:	07.04.2023
Sampling Plan & Method	:	WCS/QSP/SAMP (WATER)	Date of Receiving	:	08.04.2023
Environmental Condition	:	Temperature 29 °C, Clear Weather		:	WCS0423W03
Sample Collected by	:	WCS Laboratory	Quantity of Sample	:	1 Ltr

10.04.2023 to 15.04.2023

**Requirement as per IS** SI. Parameter Unit 10500:2012 Reaffirmed Result **Test Methods** No. 2018 1 Colour Hazen 10 IS 3025 ( Part-4): 2021 Max, 5 2 Odour Agreeable Agreeable IS 3025 ( Part-5): 2018 ---3 pH Value 6.874 6.5-8.5 IS 3025 ( Part-11): 2022 ---4 Taste Threshold ---Agreeable Agreeable IS 3025 ( Part-7): 2017 5 Turbidity NTU 1 1 IS 3025 (Part-10): 1984 RA 2017 6 Total Dissolved Solid as TDS mg/l 130 500 IS 3025 ( Part-16): 1984 RA 2017 7 Ammonia as Total ammonia-N mg/l 0.22 0.5 IS 3025 (Part-34): 1988 RA 2019 8 Calcium as Ca mg/l 14.43 75 IS 3025 (Part-40): 1991 RA 2019 9 Chloride as Cl 57.98 mg/l 250 IS 3025( Part-32): 1988 RA 2019 10 Fluoride as F mg/l < 0.02 APHA 23rd Ed. (4500-F-D): 2017 1.0 11 Iron as Fe mg/l 0.39 1.0 IS 3025 (Part -53): 2003 RA 2019 12 Magnesium as Mg mg/l 12.64 30 APHA 23rd Ed. (3500-Mg-B): 2017 13 Nitrate as NO3 < 0.01 mg/l 45 APHA 23rd Ed. (4500-NO3-B): 2017 14 Sulphate as SO4 mg/l <1 200 IS 3025 ( Part-24 Sec 1):2022 15 Total Alkalinity as CaCO3 mg/l 120 200 IS 3025 (Part-23): 1986 RA 2019 16 Total Hardness as CaCO3 mg/l 88 200 IS 3025 (Part-21): 2009 RA 2019 17 Total Chromium as Cr < 0.02 mg/l 0.05 IS 3025 (Part-52): 2003 RA 2019 18 Potassium as K mg/l 4.5 IS 3025 ( Part-45): 1993 RA 2019



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Report No. : WCS230402C

19	Sodium as Na	mg/l	6.9		IS 3025 (Part-45): 1993 RA 2019
20	Total Suspended Solid as TSS	mg/l	<5		IS 3025 ( Part-17): 2022
21	E.Coli	MPN/ 100 ml	< 1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019
22	Faecal Coliform	MPN/ 100 ml	< 1		IS 1622 : 1981 RA 2019
23	Total Coliform	MPN/ 100 ml	< 1	Shall not be detectable in any 100 ml sample	IS 1622 : 1981 RA 2019

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Marasion 19.0 ' Authorized Signatory for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

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# MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

# TEST REPORT

Report No. Name of the Client Address	::	WCS230402C National Aluminium Company Li Smelter & Power (S&P) Complex	Issue Date mited	:	17.04.2023
Sampling Location	:	Angul-759145, Odisha Gopiballavpur Village (Tube Wel	'n		
Sample Description Sampling Plan & Method Environmental Condition Sample Collected by Date of Testing		Ground Water WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather WCS Laboratory 10.04.2023 to 15.04.2023	Date of Sampling Date of Receiving		07.04.2023 08.04.2023 WCS0423W03 1 Ltr Good

SI. No.	Parameter	Unit	Result	Requirement as per IS 10500:2012 Reaffirmed 2018	Test Methods
25	Aluminium as Al	mg/l	<0.02	0.03	IS 3025 (Part 55) : 2003 RA 2019
26	Anionic detergents as MBAS	mg/l	<0.02	0.2	Annex K of IS 13428
27	Barium as Ba	mg/l	<0.1	0.7	Annex F of IS 13428* or IS 15302
28	Boron as B	mg/l	<0.1	0.5	IS 3025 (Part 57):2021
29	Chloramines as Cl <sub>2</sub>	mg/l	<0.02	4.0	IS 3025 (Part 26): 2021* or APHA 4500-CI G
30	Copper as Cu	mg/l	<0.01	0.05	IS 3025 (Part 42):1992 RA 2019
31	Manganese as Mn	mg/l	<0.05	0.1	IS 3025 (Part 59):2006 RA 2017
32	Mineral oil	mġ/l	<0.5	1.0	Clause 6 of IS 3025 (Part 39):2021
33	Phenolic compounds as C <sub>6</sub> H <sub>3</sub> OH	mg/l	<0.001	0.001	IS 3025 (Part 43): 1992 RA 2019
34	Selenium as Se	mg/l	<0.001	0.01	IS 3025 (Part 56):2003 RA 2019 or IS 15303*
35	Silver as Ag	mg/l	<0.02	0.1	Annex J of IS 13428
36	Sulphide as H <sub>2</sub> S	mg/l	<0.05	0.05	IS 3025 (Part 29):1986 RA 2019
37	Zinc as Zn	mg/l	<0.05	5	IS 3025 (Part 49):1994 RA 2019
38	Cadmium as Cd	mg/l	<0.001	0.003	IS 3025 (Part 41): 1992 RA 2019
39	Cyanide as CN	mg/l	<0.01	0.05	IS 3025 (Part 27):1986 RAA 2019
40	Lead as Pb	mg/l	<0.001	0.01	IS 3025 (Part 47): 1994 RA 2019
41	Mercury as Hg	mg/l	<0.001	0.001	IS 3025 (Part 48):1994 RA 2019
42	Molybdenum as Mo	mg/l	<0.02	0.07	IS 3025 (Part 2)



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# Report No. : WCS230402C

43	Nickel as Ni	mg/l	<0.01	0.02	IS 3025 (Part 54): 2003 RA 2019
44	Polynuclear aromatic hydro- carbons as PAH	mg/l	<0.0001	0.0001	АРНА 6440
45	Total arsenic as As	mg/l	<0.001	0.01	IS 3025 (Part 37):2022

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory

(Mr. Pradeept Mohapatra)



- The results relate to the sample received in respect to the Parameters tested.
- Liability for return of sample ceases after 7 days from the date of Test certificate.
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  - -END OF REPORT-









	TEST RE	PORT		TC-11225
:	WCS230403	Issue Date		17.04.2023
:	TC112252300000043F			
:	National Aluminium Company Li	mited		
:	Smelter & Power (S&P) Complex			
	Angul-759145, Odisha			
:	Coal Mining North Side Seepage	Water		
:	Surface Water	Date of Sampling	:	07.04.2023
:	WCS/QSP/SAMP (WATER)	Date of Receiving	:	08.04.2023
:	Temperature 29 °C, Clear Weather	Sample ID No	:	WCS0423W04
1	WCS Laboratory	Quantity of Sample	:	1 Ltr
:	10.04.2023 to 15.04.2023	Sample Condition	:	Good
		<ul> <li>WCS230403</li> <li>TC112252300000043F</li> <li>National Aluminium Company Li</li> <li>Smelter &amp; Power (S&amp;P) Complex Angul-759145, Odisha</li> <li>Coal Mining North Side Seepage</li> <li>Surface Water</li> <li>WCS/QSP/SAMP (WATER)</li> <li>Temperature 29 °C, Clear Weather</li> <li>WCS Laboratory</li> </ul>	<ul> <li>TC112252300000043F</li> <li>National Aluminium Company Limited</li> <li>Smelter &amp; Power (S&amp;P) Complex Angul-759145, Odisha</li> <li>Coal Mining North Side Seepage Water</li> <li>Surface Water Date of Sampling</li> <li>WCS/QSP/SAMP (WATER) Date of Receiving</li> <li>Temperature 29 °C, Clear Weather Sample ID No</li> <li>WCS Laboratory Quantity of Sample</li> </ul>	<ul> <li>WCS230403 Issue Date : TC112252300000043F</li> <li>National Aluminium Company Limited</li> <li>Smelter &amp; Power (S&amp;P) Complex Angul-759145, Odisha</li> <li>Coal Mining North Side Seepage Water</li> <li>Surface Water Date of Sampling : WCS/QSP/SAMP (WATER) Date of Receiving : Temperature 29 °C, Clear Weather Sample ID No : WCS Laboratory Quantity of Sample :</li> </ul>

SI. No.	Parameter	Unit	Result	Test Methods
1	Odour		Agreeable	IS 3025 ( Part-5): 2018
2	Colour	Hazen	< 5	IS 3025 ( Part-4): 2021
3	pH Value		7.835	IS 3025 ( Part-11): 2022
4	Specific Conductivity	μs/cm	794.1	IS 3025 ( Part-14): 2013
5	Dissolve Oxygen as DO	mg/l	6.1	IS 3025 ( Part-38): 1989
6	Biochemical Oxygen Demand as BOD	mg/l	<2	IS 3025 ( Part-44): 1993
7	Total Suspended Solid as TSS	mg/l	< 5	IS 3025 ( Part-17): 2022
8	Oil &Grease	mg/l	< 4	APHA 23rd Ed. ( 5520-B): 2017
9	Total Hardness as CaCO3	mg/l	256	APHA 23rd Ed. ( 2340-C): 2017
10	Chloride as Cl	mg/l	65.98	IS 3025( Part-32): 1988 RA 2019
11	Sulphate as SO <sub>4</sub>	mg/l	45.93	IS 3025 ( Part-24, Sec-1): 2022
12	Nitrate as NO3	mg/l	<1	APHA 23rd Ed. ( 4500-NO3-B): 2017
13	Fluoride as F	mg/l	< 0.02	APHA 23 <sup>rd</sup> Ed. ( 4500-F-D): 2017
14	Calcium as Ca	mg/l	33.67	APHA 23rd Ed. (3500-Ca-B): 2017
15	Magnesium as Mg	mg/l	41.8	APHA 23rd Ed. (3500-Mg-B): 2017
16	Iron as Fe	mg/l	0.03	IS 3025 ( Part-53): 2003
17	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	< 0.01	IS 3025 ( Part-52): 2003
18	Sodium as Na	mg/l	4.9	IS 3025 ( Part-45): 1993
19	Potassium as K	mg/l	7.2	IS 3025 ( Part-45): 1993



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Repo	ort No. : WCS230403			
20	Alkalinity as CaCO3	mg/l	230	IS 3025 ( Part-23): 1986
21	Chemical Oxygen Demand as COD	mg/l	2.4	IS 3025 ( Part-58) : 2006
22	Total Dissolved Solid as TDS	mg/l	373	IS 3025 ( Part-16): 1984
23	Turbidity	NTU	1	IS 3025 (Part-10): 1984
24	E.Coli	MPN/ 100 m	<1	IS 1622 : 1981
25	Faecal Coliform	MPN/ 100 m	<1	IS 1622 : 1981
26	Total Coliform	MPN/ 100 ml	3	IS 1622 : 1981

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Reviewed by (Mr. Bijaya Kumar Chahataray)

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Maranovi Port Authorized Signatory for Microbiology (Mrs. Manaswini Rout) Authorized Signatory for Chemical (Mr. Pradeept Mohapatra)

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N.B.: O The results relate to the sample received in respect to the Parameters tested.
C Liability for return of sample ceases after 7 days from the date of Test certificate.

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