

Laboratory **JSW Steel Limited - Environment Laboratory, Vidyanagar PO, Bellary Dist., Karnataka**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7781**

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Validity **30.08.2018 to 29.08.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<u>CHEMICAL TESTING</u>				
I.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Sulphur Dioxide	IS 5182 (Part 2) :2001 (RA 2017)	5 µg/m ³ to 500 µg/m ³
		Nitrogen Dioxide	IS 5182 (Part 6) :2006 (RA 2017)	8 µg/m ³ to 500 µg/m ³
		Particulate Matter (Size less than 10µm) or PM10	IS 5182 (Part 23) :2006 (RA 2017)	5 µg/m ³ to 3000 µg/m ³
		Particulate Matter (Size less than 2.5µm) or PM2.5	PM2.5 -USEPA Quality Assurance Hand Book Vol. (Part 11)	5 µg/m ³ to 600 µg/m ³
	2.	Stack Emission	Particulate Matter	IS 11255(Part1):1985 (RA 2014)
Oxides of Sulphur			IS 11255 (Part 2):1985 (RA 2014)	5 mg/Nm ³ to 500 mg/Nm ³
Oxides of Nitrogen			IS 11255 (Part 7):2005 (RA 2017)	8 mg/Nm ³ to 400 mg/Nm ³
II.	WATER			
1.	Bore Well Water, Potable Water, Surface Water, Ground Water	Temperature	APHA 23rd Edition, 2550 B	Ambient-50 °C
		Turbidity	APHA 23rd Edition, 2130 B	0.1 NTU to 100 NTU
		Acidity as CaCO ₃	APHA 23rd Edition, 2310 B	2 mg/l to 2500 mg/l
		Alkalinity as CaCO ₃	APHA 23rd Edition, 2320 B	2 mg/l to 2500 mg/l
		Hardness as CaCO ₃	APHA 23rd Edition, 2340 C	2 mg/l to 5000 mg/l
		Conductivity at 25 °C	APHA 23rd Edition, 2510 B	1 µS/cm to 25000 µS/cm

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		Total Solids	APHA 23rd Edition, 2540 B	2.5 mg/l to 10000 mg/l
		Total Suspended Solids Dried at 103-105°C	APHA 23rd Edition, 2540 D	2.5 mg/l to 2000 mg/l
		Total Dissolved Solids Dried at 180°C	APHA 23rd Edition, 2540 C	2.5 mg/l to 15000 mg/l
		Total Cyanide	APHA 23rd Edition, 4500-CN- C and E	0.01 mg/l to 1 mg/l
		Residual Chlorine	APHA 23rd Edition, 4500-(Cl)B	1 mg/l to 10 mg/l
		Chloride as Cl	APHA 23rd Edition, 4500-(Cl-)B	2 mg/l to 2500 mg/l
		pH value at 25°C	APHA 23rd Edition, 4500-(H+)B	2 to 12
		Nitrite Nitrogen as NO ₂	APHA 23rd Edition, 4500 (NO ₂)B	0.1 mg/l to 100 mg/l
		Dissolved Oxygen	APHA 23rd Edition, 4500 (O)B	1 mg/l to 7.0 mg/l
		Sulphate as SO ₄	APHA 23rd Edition, 4500 (SO ₄) E	1 mg/l to 2500 mg/l
		Phenolic Compounds	APHA 23rd Edition, 5530 B, & D	1 mg/l to 10 mg/l
		Calcium as CaCO ₃	APHA 23rd Edition, 3500 ca, B	2 mg/l to 1000 mg/l
		Magnesium As Mg	APHA 23rd Edition, 3500 Mg, B	2 mg/l to 1000 mg/l
		Zinc as Zn	APHA 23rd Edition, 3111-B, Zn	0.1 mg/l to 10 mg/l
		Copper as Cu	APHA 23rd Edition 3111-B, Cu	0.1 mg/l to 10 mg/l
III.	POLLUTION & ENVIRONMENT			
1.	Effluent & Sewage Water	Temperature	APHA 23rd Edition, 2550 B	Ambient to -50 °C

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		Conductivity at 25°C	APHA 23rd Edition, 2510 B	1 µS/cm to 50000 µS/cm
		pH value at 25°C	APHA 23rd Edition, 4500-(H+)B	2 to 12
		Turbidity	APHA 23rd Edition, 2130 B	0.1 NTU to 500 NTU
		Acidity as CaCO ₃	APHA 23rd Edition, 2310 B	2 mg/l to 10000 mg/l
		Alkalinity as CaCO ₃	APHA 23rd Edition, 2320 B	2 mg/l to 10000 mg/l
		Hardness as CaCO ₃	APHA 23rd Edition, 2340 C	2 mg/l to 10000 mg/l
		Calcium as CaCO ₃	APHA 23rd Edition, 3500 ca, B	2 mg/l to 1000 mg/l
		Magnesium as Mg	APHA 23rd Edition, 3500 Mg, B	2 mg/l to 1000 mg/l
		Total Solids	APHA 23rd Edition, 2540 B	10 mg/l to 100000 mg/l
		Total Suspended Solids Dried at 103-105°C	APHA 23rd Edition, 2540 D	2.5 mg/l to 10000 mg/l
		Total Dissolved Solids Dried at 180°C	APHA 23rd Edition, 2540 C	10.0 mg/l to 100000 mg/l
		Total Cyanide	APHA 23rd Edition, 4500-CN- C and E	0.01 mg/l to 100 mg/l
		Residual Chlorine	APHA 23rd Edition, 4500-(Cl)B	1 mg/l to 10 mg/l
		Chloride as Cl	APHA 23rd Edition, 4500-(Cl-)B	2 mg/l to 50000 mg/L
		Ammonical Nitrogen	APHA 23rd Edition, 4500-(NH ₃)C	1 mg/l to 1000 mg/l
		Nitrite Nitrogen as NO ₂	APHA 23rd Edition, 4500(NO ₂)B	0.1 mg/l to 250 mg/l
		Dissolved Oxygen	APHA 23rd Edition, 4500 (O)B	1 mg/l to 7.0 mg/l

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		Sulfide as S ²	APHA 23rd Edition, 4500 (S ₂)F	2 mg/l to 100 mg/l
		Sulfate as SO ₄	APHA 23rd Edition, 4500 (SO ₄) E	1 mg/l to 500 mg/l
		Biochemical Oxygen(BOD) @ 27 °C Demand (3 days)	IS 3025 (Part 44) 1993 (RA 2014)	5 mg/l to 3000 mg/l
		Chemical Oxygen Demand (COD)	APHA 23rd Edition, 5220 D	4 mg/l to 5000 mg/l
		Oil and Grease	IS 3025 (Part 39) 1991 (RA 2014) Partition gravimetric method	2 mg/l to 100 mg/l
		Phenolic Compounds	APHA 23rd Edition, 5530B, D	1 mg/l to 5 mg/l
		Zinc as Zn	APHA 23rd Edition, 3111-B-, Zn	0.1 mg/l to 10 mg/l
		Copper as Cu	APHA 23rd Edition 3111-B, Cu	0.1 mg/l to 10 mg/l