

Laboratory **Enviro Lab, S-2 & S-3, Phase-II, RIICO, Industrial Area, Bhiwadi, Alwar, Rajasthan**

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

Certificate Number **TC-6773**

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Validity **09.06.2018 to 11.01.2020**

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

I. ATMOSPHERIC POLLUTION				
1.	Ambient Air	Suspended Particulate Matter (SPM)	IS 5182 (Part 4): 1999 (RA 2010)	100 µg/m ³ to 2000 µg/m ³
		Respirable Suspended Particulate Matter (PM10)	IS 5182 (Part 23):2006 (Gravimetric Method)	10 µg/m ³ to 1000 µg/m ³
		PM (PM2.5)	FRP/FEM USEPA Candidate Method - I	10 µg/m ³ to 1000 µg/m ³
		Sulphur Dioxide (SO ₂)	IS 5182 (Part-2):2001 (Colorimetric Method)	4 µg/m ³ to 1050 µg/m ³
		Nitrogen Dioxide (NO ₂)	IS 5182 (Part-6):2006, RA-2012 (Colorimetric Method)	6 µg/m ³ to 750 µg/m ³
		Ozone (O ₃)	IS 5182 (Part 9): 1974 (RA 2014) (Colorimetric method)	10 µg/m ³ to 200 µg/m ³
		Ammonia (NH ₃)	APHA AIR (3rd Edition) Indophenol Blue Method	10 µg/m ³ to 700 µg/m ³
2.	Stack Gas Emission/Fugitive	Particulate Matter	IS 11225 (Part-I)-1985 (RA 2009) (Isokinetic Sampling)	10 mg/Nm ³ to 1000 mg/Nm ³
		Sulphur Dioxide (SO ₂)	IS 11255 (Part -2)-1985 (RA 2014) /APHA (AIR) (3rd Edition) (IPA –Thorin Method)	5 mg/Nm ³ to 500 mg/Nm ³
		Nitrogen Dioxide (NO _x)	IS 11255 (Part -7)-2005 (RA 2012)/USEPA Method-7, (Colorimetric Method)	5 mg/Nm ³ to 500 mg/Nm ³
		Ammonia as NH ₃	IS 11255 (Part 6): 1999, (RA 2014)	5 mg/Nm ³ to 100 mg/Nm ³
3.	Noise Level Ambient & Source)	Ambient Noise, Leq dB(A)	IS 9989: 1981 (RA 2003)	30 dB(A) -130 dB(A)

Vivek Vardhan
Convenor

Alok Jain
Program Director

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II.	POLLUTION & ENVIRONMENT			
1.	Waste water	Turbidity	IS 3025 (Part 10): 1984 (RA 2012)	5 NTU to 100 NTU
		pH value	IS 3025 (Part 11): 1983 (RA 2002)	2 to 12
		Total Hardness (as CaCO ₃)	IS 3025 (Part 21): 2009 (RA 2014)	100 mg/l to 10000 mg/l
		Iron as Fe	IS 3025 (Part 53): 2003 (RA 2009) / APHA (22 nd Edition)/ AAS Method	1 mg/l to 30 mg/l
		Chloride	IS 3025 (Part 32): 1988 (RA 2003)	50 mg/l to 1000 mg/l
		Total Dissolved Solid	IS 3025 (Part 16): 1984 (RA 2012) Amd.1	100 mg/l to 5000 mg/l
		Calcium	IS 3025 (Part 40): 1999 (RA 2009)	100 mg/l to 1000 mg/l
		Total Alkalinity	IS 3025 (Part 23): 1991 (RA 2014) Amd. 2	100 mg/l to 1000 mg/L
		Magnesium	IS 3025 (Part 46): 1994 (RA 2014) Amd.2	25 mg/l to 250 mg/l
		Dissolved Oxygen (DO)	IS 3025 (Part -38): 1999 (RA 2009)	1 mg/l to 10 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006	50 mg/l to 10000 mg/l
		Total Suspended Solid	IS 3025 (Part 16): 1984 (RA 2012) Amd.1	10 mg/l to 1000 mg/l
		Total Solid	IS 3025 (Part 15): 1984 (RA 2012) Amd.1	10 mg/l to 5000 mg/l
		Specific Conductance	IS 3025 (Part 14): 2013	10 µs/cm to 200 µs/cm
		Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 (RA 2014) Amd.1/ APHA (22 nd Edn.)	2 mg/l to 3000 mg/l
		Oil & Grease	IS 3025 (Part 39): 1991 (RA 2014) Amd. 2	5 mg/l to 1000 mg/l

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		Sulfate	IS 3025 (Part 24): 1986 (RA 2014)	5 mg/l to 1000 mg/l
		Fluoride as F	IS 3025 (Part 60): 2008 (RA 2013)/ APHA (22 nd Edition)	2 mg/l to 20 mg/l
		Nitrate as NO ₃	IS 3025 (Part 34): 1988 (RA 2014)	5 mg/l to 100 mg/l
		Chromium Hexavalent (Cr ⁺⁶)	IS 3025 (Part 52): 2003 (RA 2014)/ APHA (22 nd Edition) 3500 Cr-B,	1 mg/l to 100 mg/l
		Lead as Pb	IS 3025 (Part 47): 1994 (RA 2014), Amd. 2 , /APHA (22 nd Edition)/ 3030 A-I, AAS Method	1 mg/l to 100 mg/l
		Copper as Cu	IS 3025 (Part 42): 1992 (RA 2014) Amd. 1,/ APHA (22 nd Edition) / 3030 A-I,/AAS Method	5 mg/l to 100 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2014) Amd. 1,/ APHA (22 nd Edition), 3030 A-I./ AAS Method	1 mg/l to 100 mg/l
		Phosphorus	IS:3025 (Part 31) 1998 RA 2014	5 mg/l to 100 mg/l
		Sodium	IS:3025 (Part 45) 1993 RA 2003	25 mg/l to 5000 mg/l
		Potassium	IS:3025 (Part 45) 1993 RA 2003	25 mg/l to 5000 mg/l
		Colour	IS 3025 (Part 4): 1983 (RA 2012) Amd. 4	1 Hazen to 500 Hazen
		Temperature (°C)	IS 3025 (Part 9): 1984 (RA 2012)	1 °C to 100 °C
		Acidity	IS 3025 (Part 22):1986 (RA 2014)	10 mg/l to 1000 mg/l

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		Ammonical Nitrogen as NH ₃ -N	IS 3025 (Part 34):1988 (RA 2014)	1 mg/l to 100 mg/l
		Free Residual Chlorine	IS 3025 (Part 26):1986 (RA 2014), Amd.1	1 to 10 mg/l
		Silica (Total or molybdate reactive & unreactive silica)	IS 3025 (Part 35):1988 (RA 2014) Gravimetric Method-Total Molybdosilicate & Hetero poly Blue Method	0.5 mg/l to 25 mg/l
		Cadmium	IS 3025 (Part 41): 1992 (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20]/AAS	1 mg/l to 100 mg/l
		Total Arsenic	IS 3025 (Part 37): 2003, (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20]/AAS	0.05 mg/l to 100 mg/l
2.	Soil/Sludge	pH value	IS 2720 (Part 26): 1987 (RA 2010) Amd. 1 [Electrometric Method]	2 to 12
		Specific Electrical Conductivity	IS 14767:2000 [Instrumental Method]	0.1 μS to 200 μS
		Available Nitrogen	IS 14684:1999, (RA 2005) [Devarda's Alloy Method]	5 mg/kg to 280 mg/kg
		Organic matter	IS 2720 (Part 22): 1972 (RA 2010) Amd.1	0.5 % to 30 %
		Bulk Density	IS: 2720 (Part 28):1974 (RA 2010) & (Part 29), RA (2005) & SOP No. EL/SOP/SOIL/05 [By Clod Method]	0.5 g/cm ³ to 5 g/cm ³

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		Available Potassium	USEPA 3050 B (AAS Flame) Dec. 1996 Rev.2/ SOP No. EL/SOP/SOIL/06	5 mg/kg to 5000 mg/kg
		Available Sodium	USEPA 3050 B (AAS Flame) Dec. 1996 Rev.2, SOP No. EL/SOP/SOIL/06	5 mg/kg to 5000 mg/kg
		Available Chloride	USEPA 9253	5 mg/kg to 25000 mg/kg
		Available Phosphorus	IS: 5305-1969,/ Stannous Chloride Method	1 mg/kg to 500 mg/kg
		Moisture Content (Loss on Drying) at 105°C	IS 9235: 1979	1 % to 80 %
		Ash Content at 850°C	IS 1350 (Part 1):1984 (RA 2013)	1 % to 80 %
3.	Solid & Hazardous wastes	pH value	USEPA Method 9045D [Electrometric Method]	2 to 12
		Moisture Content (Loss on Drying) at 105°C	IS 9235: 1979	1 % to 80 %
		Ash Content at 850°C	IS 1350 (Part 1): 1984 (RA 2013)	1 % to 80 %
		Gross Calorific Value	IS: 1350 (Part-2), Bomb Calorimetric Method	30 Cals/g to 10000 Cals/g
III.	WATER			
1.	Surface Water, Ground Water, Drinking Water, Potable Water, Raw Water, Domestic Water, RO Water, De-mineralized Water	Turbidity	IS 3025 (Part 10): 1984 (RA 2012)	1 NTU to 100 NTU
		pH Value	IS 3025 (Part 11): 1983 (RA2002)	2 to 12
		Total Hardness (as CaCO ₃)	IS 3025 (Part 21): 2009 (RA 2014)	1 mg/l to 10000 mg/l
		Iron as Fe	IS 3025 (Part 53): 2003 (RA 2009) / APHA (22nd Edition/By AAS Method	0.3 mg/l to 30 mg/l
		Chloride	IS 3025 (Part 32): 1988 (RA 2003)	5 mg/l to 1000 mg/l

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		Total Dissolved Solid	IS 3025 (Part 16): 1984 (RA 2012) Amd.1	10 mg/l to 5000 mg/l
		Calcium	IS 3025 (Part 40): 1999 (RA 2009)	10 mg/l to 1000 mg/l
		Total Alkalinity	IS 3025 (Part 23): 1991 (RA 2014) Amd. 2	10 mg/l to 1000 mg/L
		Magnesium	IS 3025 (Part 46): 1994 (RA 2014) Amd.2	10 mg/l to 250 mg/l
		Dissolved Oxygen (DO)	IS 3025 (Part -38): 1999 (RA 2009)	0.1 mg/l to 10 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006	10 mg/l to 10000 mg/l
		Total Suspended Solid	IS 3025 (Part 16): 1984 (RA 2012) Amd.1	10 mg/l to 1000 mg/l
		Total Solid	IS 3025 (Part 15): 1984 (RA 2012) Amd.1	10 mg/l to 5000 mg/l
		Specific Conductance	IS 3025 (Part 14): 2013	0.1 μ s/cm to 200 μ s/cm
		Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 (RA 2014) Amd.1/ APHA (22 nd Edn.)	2 mg/l to 3000 mg/l
		Oil & Grease	IS 3025 (Part 39): 1991 (RA 2014) Amd. 2	1 mg/l to 1000 mg/l
		Sulfate	IS 3025 (Part 24): 1986 (RA 2014)	10 mg/l to 1000 mg/l
		Fluoride as F	IS 3025 (Part 60): 2008 (RA 2013)/APHA 22 nd . Edn.)	0.05 mg/l to 20 mg/l
		Nitrate as NO ₃	IS 3025 (Part 34): 1988 (RA 2014)	10 mg/l to 100 mg/l
		Chromium Hexavalent (Cr ⁺⁶)	IS 3025 (Part 52): 2003 (RA 2014)/APHA (22 nd Edition) 3500 Cr-B.	0.05 mg/l to 100 mg/l

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		Lead as Pb	IS 3025 (Part 47): 1994 (RA 2014), Amd. 2, / APHA (22 nd Edition) 3030 A-I, / AAS Method	0.01 mg/l to 100 mg/l
		Copper as Cu	IS 3025 (Part 42): 1992 (RA 2014) Amd. 1, / APHA (22 nd Edition) 3030 A-I, / AAS Method	0.05 mg/l to 100 mg/l
		Zinc as Zn	IS 3025 (Part 49): 1994 (RA 2014) Amd.1, / APHA (22 nd Edition) 3030 A-I, AAS Method	5 mg/l to 100 mg/l
		Phosphorus	IS:3025 (Part 31)1998 RA 2014	0.05 mg/l to 100 mg/l
		Sodium	IS:3025 (Part 45) 1993 RA 2003	9 mg/l to 5000 mg/l
		Potassium	IS:3025 (Part 45) 1993 RA 2003	10 mg/l to 5000 mg/l
		Colour	IS 3025 (Part 4): 1983 (RA 2012) Amd. 4	1 Hazen to 500 Hazen
		Temperature (°C)	IS 3025 (Part 9): 1984 (RA 2012)	1 °C to 100 °C
		Acidity	IS 3025(Part 22)1986 (RA 2014)	1 mg/l to 1000 mg/l
		Ammonical Nitrogen as NH ₃ -N	IS 3025 (Part 34): 1988 (RA 2014)	0.1 mg/l to 100 mg/l
		Free Residual Chlorine	IS 3025 (Part 26): 1986 (RA 2014), Amd.1	0.1 mg/l to 10 mg/l
		Silica (Total or molybdate reactive & unreactive silica)	IS 3025 (Part 35): 1988 (RA 2014) Gravimetric Method-Total Molybdosilicate Method Heteropoly Blue Method	1 mg/l to 25 mg/l 0.5 mg/l to 25 mg/l 0.01 mg/l to 5 mg/l

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		Aluminium	IS 3025 (Part 55): 2003 (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20]/ AAS Method	0.03 mg/l to 100 mg/l
		Cadmium	IS 3025 (Part 41): 1992 (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20]/ AAS Method	0.003 mg/l to 100 mg/l
		Total Chromium	IS 3025 (Part 52): 2003, (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20]/ AAS Method	0.05 mg/l to 100 mg/l
		Total Arsenic	IS 3025 (Part 37): 2003, (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20] / AAS Method	0.01 mg/l to 100 mg/l
		Manganese	IS 3025 (Part 59): 2006, (RA 2014)/ APHA (22 nd Edition) 3030 A-I, [Page 3-6 to 3-11 & 3111B Page 3-18 to 3-20] /AAS Method	0.1 mg/l to 100 mg/l

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