

Laboratory Pollution and Project Consultants, P-145, Bangur Avenue, Block-A, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7690 (in lieu of T-0958)

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Validity 25.07.2018 to 24.07.2020

Last Amended on 06.08.2018

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	Particulate Matter (Particle size less than 2.5µm)-PM _{2.5}	SOP No. SOP/02/02, Issue. & Dated. 02.04.2015	12.0 µg/m ³ to 200 µg/m ³
		Particulate Matter (Particle size less than 10 µm)-PM ₁₀	IS 5182 (Part 23): 2006 (RA 2017)	12.0 µg/m ³ to 1000 µg/m ³
		Sulphur Di-Oxide (SO ₂)	IS 5182 (Part 2): 2001 (RA 2017)	10.0 µg/m ³ to 200 µg/m ³
		Nitrogen Di-Oxide (NO ₂)	IS 5182 (Part 6): 2006 (RA 2017)	10.0 µg/m ³ to 200 µg/m ³
		Total Fluoride (as F ⁻)	IS 5182 (Part 13): 1991 (RA 2014)	2.0 µg/m ³ to 50 µg/m ³
		Ammonia (as NH ₃)	APHA (Air Analysis) (3rd Edition) 2016 Method 401	20 ng/m ³ to 500 ng/m ³
		Ozone (as O ₃)	APHA (Air Analysis) (3rd Edition) 2016 Method 819	20.0 µg/m ³ to 300 µg/m ³
		Carbon Monoxide	APHA (Air Analysis) (3rd Edition) 2016 Method 128	50 µg/m ³ to 5000 µg/m ³
2.	Fugitive Emission	Total Suspended Particulate Matter (TSPM)	IS 5182 (Part 4): 1999 (RA 2014)	20 µg/m ³ to 1000 µg/m ³
3.	Stack Emission	Particulate Matter (PM)	IS 11255 (Part 1): 1985 (RA 2014) & IS 11255 (Part 3): 2013	5.0 mg/Nm ³ to 200 mg/Nm ³
		Sulphur Di- Oxide (SO ₂)	IS 11255 (Part 2): 1985 (RA 2014)	5.0 mg/Nm ³ to 1000 mg/Nm ³
		Flue Gas analysis CO ₂	ORSAT Analysis Air	0.2 % to 20 %
		Flue Gas analysis O ₂	Analysis APHA	0.2 % to 20 %
		Flue Gas analysis CO	(3rd Edition) Method 134	0.2 % to 20 %

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		Oxides Of Nitrogen	IS 11255 (Part 7): 2005 (RA 2017)	25.0 mg/Nm ³ to 1000 mg/Nm ³
4.	Noise Level	Noise Level	SOP No. SOP/02/17, Issue.& Dated. 02.04.2015	30 dB(A) to 110 dB(A) 80 dB(A) to 130 dB(A)
5.	Metrological Monitoring	Temperature Wind Speed Wind Direction Relative Humidity Rain Fall	SOP No. SOP/02/18, Issue. 02& Dated. 02.04.2015	0 to 50 °C 0 to 100 k/ h 0 to 360° 0 to 100 % 0 to 50 mm /h
II.	WATER			
1.	Borewell/ Surface/ Potable	pH	APHA (23 rd Edition) 4500 H+B: 2017	2 to 12
		Conductivity	APHA (23 rd Edition) 2510 B: 2017	1.0 µS/cm to 10000 µS/cm
		Turbidity	APHA (23 rd Edition) 2130 B: 2017	1.0 NTU to 1000 NTU
		Chloride (as Cl)	APHA (23 rd Edition) 4500 - Cl. B: 2017	10 mg/l to 1000 mg/l
		Mercury (as Hg)	APHA (23 rd Edition) 3112 B: 2017	0.001 mg/l to 1.0 mg/l
		Fluoride (as F)	APHA (23 rd Edition): 4500-F.D: 2017	0.2 mg/l to 100 mg/l
		Nitrate-N (NO ₃ ⁻ -N)	APHA (23 rd Edition) 4500-NO ₃ .E: 2017	5 mg/l to 100 mg/l
		Sulfate (SO ₄ ²⁻)	IS 3025 (Part 24): 1986 (RA 2014)	5.0 mg/l to 500 mg/l
		Total Dissolved Solids (TDS)	APHA (23 rd Edition) 2540 C: 2017	5.0 mg/l to 1000 mg/l
		Copper (as Cu)	APHA (23 rd Edition) 3111B: 2017	0.05 mg/l to 10 mg/l
		Iron (as Fe)	APHA (23 rd Edition) 3111 B: 2017	0.10 mg/l to 20 mg/l

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		Nickel (as Ni)	APHA (23 rd Edition) 3111 B: 2017	0.02 mg/l to 20 mg/l
		Zinc (as Zn)	APHA (23 rd Edition) 3111 B: 2017	0.05 mg/l to 25 mg/l
		Sodium (as Na)	APHA (23 rd Edition): 3500 Na B: 2017	3 mg/l to 100 mg/l
		Potassium (as K)	APHA (23 rd Edition): 3500 K B: 2017	3 mg/l to 100 mg/l
		Total Hardness (as CaCO ₃)	IS 3025 (Part 21): 2009 (RA 2014)	5.0 mg/l to 1000 mg/l
		Calcium Hardness (as CaCO ₃)	IS 3025 (Part 40): 1991 (RA 2014)	5.0 mg/l to 1000 mg/l
		Magnesium (as Mg)	IS 3025 (Part 46): 1994 (RA 2014)	2.0 mg/l to 500 mg/l
		Magnesium Hardness (as CaCO ₃)	IS 3025 (Part 46): 1994 (RA 2014)	10.0 mg/l to 1000 mg/l
		Total Alkalinity (as CaCO ₃)	APHA (23 rd Edition) 2320 B: 2017	5.0 mg/l to 1000 mg/l
		Nitrite-N (NO ₂ ⁻ - N)	APHA (23 rd Edition) 4500-NO ₂ ⁻ .B: 2017	0.1 mg/l to 100 mg/l
		Calcium (as Ca)	IS 3025 (Part 40): 1991 (RA 2014)	5.0 mg/l to 500 mg/l
III.	POLLUTION AND ENVIRONMENT			
1.	Waste Water Sewage & Effluent	pH	APHA (23 rd Edition) 4500 H+B: 2017	4 to 12
		Conductivity	APHA (23 rd Edition) 2510 B: 2017	1.0 µS/cm to 10000 µS/cm
		Turbidity	APHA (23 rd Edition) 2130 B: 2017	1.0 NTU to 1000 NTU
		Arsenic (as As)	IS 3025 (Part 37): 1988 (RA 2014)	0.5 mg/l to 2.0 mg/l

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		Chloride (as Cl)	APHA (23 rd Edition) 4500-Cl. B: 2017	1.0 mg/l to 1000 mg/l
		Mercury (as Hg)	APHA (23 rd Edition) 3112 B: 2017	0.01 mg/l to 1.0 mg/l
		Fluoride (as F)	APHA (23 rd Edition): 4500-F.D	0.5 mg/l to 100 mg/l
		Nitrate-N (NO ₃ ⁻ -N)	APHA (23 rd Edition) 4500-NO ₃ .E: 2017	0.01 mg/l to 100 mg/l
		Phenol	APHA (23 rd Edition) 5530 - D: 2017	0.05 mg/l to 5.0 mg/l
		Sulfate (SO ₄ ²⁻)	IS 3025 (Part 24): 1986 (RA 2014)	10.0 mg/l to 500 mg/l
		Total Dissolved Solids (TDS)	APHA (23 rd Edition) 2540 C: 2017	5.0 mg/l to 1000 mg/l
		Biochemical Oxygen Demand	IS 3025 (Part 44): 1993 (RA 2014)	5.0 mg/l to 1000 mg/l
		Chemical Oxygen Demand	APHA (23 rd Edition) 5220 B: 2017	5.0 mg/l to 1000 mg/l
		Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (RA 2014)	1.0 mg/l to 8.0 mg/l
		Oil & Grease	APHA (23 rd Edition) 5520 B: 2017	2.0 mg/l to 100 mg/l
		Lead (as Pb)	APHA (23 rd Edition) 3111 B: 2017	0.2 mg/l to 10 mg/l
		Copper (as Cu)	APHA (23 rd Edition) 3111 B: 2017	0.1 mg/l to 10 mg/l
		Iron (as Fe)	APHA (23 rd Edition) 3111 B: 2017	0.1 mg/l to 20 mg/l
		Nickel (as Ni)	APHA (23 rd Edition) 3111 B: 2017	0.1 mg/l to 20 mg/l
		Total Chromium (as Cr)	APHA (23 rd Edition) 3111 B: 2017	0.2 mg/l to 20 mg/l
		Cadmium (as Cd)	APHA (23 rd Edition) 3111 B: 2017	0.1 mg/l to 10 mg/l

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		Zinc (as Zn)	APHA (23 rd Edition) 3111 B: 2017	0.1 mg/l to 25 mg/l
		Total Suspended Solids	APHA (23 rd Edition) 2540 D: 2017	5.0 mg/l to 1000 mg/l
		Total Solids	APHA (23 rd Edition) 2540 B: 2017	5.0 mg/l to 1000 mg/l
		Ammonical Nitrogen	APHA (23 rd Edition) 4500 - NH ₃ .C: 2017	3.0 mg/l to 100 mg/l
		Nitrogen (Organic)	APHA (23 rd Edition) 4500-N.B: 2017	5.0 mg/l to 400 mg/l
		Hexavalent Chromium	APHA (23 rd Edition) 3500-Cr.B: 2017	0.1 mg/l to 5.0 mg/l
		Total Phosphorus (as P)	APHA (23 rd Edition) 4500-P. C: 2017	4.0 mg/l to 100 mg/l
2.	Soil/Sludge/ Sediment and Solid Waste	pH	IS 2720 (Part 26): 1987 (RA 2016)	1 to 14
		Electrical Conductivity	IS 14767: 2000 (RA 2016)	1µS/cm to 1000 µS/cm
		Zinc (as Zn)	EPA 3050 B, 7000B	0.5 mg/kg to 500 mg/kg
		Nickel (as Ni)	EPA 3050 B, 7000B	5 mg/kg to 500 mg/kg
		Lead (as Pb)	EPA 3050 B, 7000B	5 mg/kg to 500 mg/kg
		Cadmium (as Cd)	EPA 3050 B, 7000B	0.5 mg/kg to 500 mg/kg
		Copper (as Cu)	EPA 3050 B, 7000B	5 mg/kg to 500 mg/kg
		Mercury (as Hg)	EPA 7471 B	0.5 mg/kg to 10 mg/kg
		Available Phosphorous (as P)	SOP No. SOP/03/04, Issue. 02 & Dated. 01.01.2018	0.1 mg/g to 50 mg/g
		Available Nitrogen	SOP No. SOP/03/03, Issue. 02 & Dated. & 01.01.2018	0.01 mg/g to 1 mg/g
		Arsenic (as As)	SOP No. SOP/03/02, Issue 02 & Dated. 01.01.2018	0.5 mg/kg to 10 mg/kg

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		Calcium (as Ca)	SOP No. SOP/03/08, Issue. 02& Dated. 01.01.2018	0.5 mg/g to 100 mg/g
		Cation Exchange Capacity	SOP No.SOP/03/05, Issue 02& Dated. 01.01.2018	(1.0 meq to 100 meq)/100 g
		Fluoride (as F ⁻)	SOP No.SOP/03/09, Issue. 02 & Dated. 01.01.2018	5 mg/kg to 500 mg/kg
		Potassium (as K)	SOP No.SOP/03/11, Issue 02 & Dated. 01.01.2018	0.1 mg/g to 50 mg/g
		Sodium (as Na)	SOP No.SOP/03/11, Issue 02 & Dated. 01.01.2018	0.1 mg/g to 50 mg/g
		Magnesium (as Mg)	SOP No. SOP/03/08, Issue 02& Dated. 01.01.2018	0.5 mg/g to 100 mg/g
		Nitrate (as NO ₃ ⁻)	SOP No. SOP/03/12, Issue 02 & Dated. 01.01.2018	1 mg/kg to 500 mg/kg
		Total -Nitrogen (as N)	IS 14684: 1999 (RA 2014)	0.01 mg/g to 5 mg/g
		Total Organic Carbon	IS 2720 (Part 22): 1972 (RA 2015)	0.1 mg/g to 25 mg/g
		Total Organic Matter	IS 2720 (Part 22): 1972 (RA 2015)	0.1 mg/g to 25 mg/g
		Total Phosphorous (as P)	SOP No.SOP/03/21, Issue. 02& Dated. 01.01.2018	0.1 mg/g to 50 mg/g
		Water Soluble Chloride (as Cl)	SOP No. SOP/03/06, Issue. 02& Dated. 01.01.2018	0.1 mg/g to 100 mg/g
		Total Soluble Sulfate (as SO ₄)	IS 2720 (Part 27): 1977 (RA 2015)	0.1 mg/g to 100 mg/g
		Total Sulfur (as S)	IS 14685:1999 (RA 2014)	0.1 mg/g to 100 mg/g

Sandeep Singh Tomar
Convenor

Pankaj Johri
Program Manager

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		Total Soluble Solids	IS 2720 (Part 21): 1977 (RA 2015)	1 mg/g to 1000 mg/g
		Oil Content	APHA (23 rd Edition) 5520 D,E: 2017	0.1 mg/g to 10 mg/g
		Total Chromium	EPA 3050 B, 7000B	5 mg/kg to 500 mg/kg
		Moisture Content	IS 2720 (Part 2): 1973 (RA 2015)	0.1 % to 20 %
		Texture: Clay	SOP No.SOP/03/18, Issue No. 01& Date 14.01.2016	0.10 % to >95 %
		Texture: Silt		0.10 % to >95 %
		Texture: Sand		0.10 % to >95 %
		Iron (as Fe)	EPA 3050 B, 7000B	5 mg/kg to 1000 mg/kg
		Specific Gravity	IS 2720 (Part 3/Sec 1): 1980 (RA 2016)	1.50 to 5.0

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