

Laboratory R. V. Briggs & Company Pvt. Ltd, 9 Bentinck Street, Thair Mansion, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7815

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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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**BIOLOGICAL TESTING**

I	WATER					
1.	Potable Water	Coliform	IS 1622	<2 to ≥1600 MPN/100ml		
			IS 5401(Part 1)	≥1 CFU/ ml		
			IS 15185	≥1 CFU/ 250 ml		
			APHA-9222B (23 <sup>rd</sup> Edition)	≥1 CFU /100 ml		
		Faecal Coliform	IS 1622	<2 to ≥1600 MPN/100ml		
			APHA-9222D (23 <sup>rd</sup> Edition)	≥1 CFU /100 ml		
			Escherichia coli	IS 1622	<2 to ≥1600 MPN/100ml	
			IS 15185	≥1 CFU/ 100 ml		
		2.	Surface Water	Total Plate Count	APHA-9222H (23 <sup>rd</sup> Edition)	Present or Absent / 100 ml
					IS 5402	≥1 CFU/ ml
Yeast & Mould Count	APHA-9215B (23 <sup>rd</sup> Edition)			≥1 CFU/ ml		
	APHA-9215D (23 <sup>rd</sup> Edition)			≥1 CFU/ ml		
	IS 5403			≥1 CFU/ ml		
	Coliform			IS 1622	<2 to ≥1600 MPN/100ml	
APHA-9221B (23 <sup>rd</sup> Edition)		<1.8 to >1600 MPN/100ml				
APHA-9222B (23 <sup>rd</sup> Edition)		≥1 CFU /100ml				

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		Faecal Coliform	IS 1622	<2 to ≥1600 MPN/100ml
			APHA-9221E (23rd Edition)	<1.8 to >1600 MPN/100ml
			APHA-9222D (23rd Edition)	≥1 CFU/100ml
		Escherichia coli	IS 1622	<2 to ≥1600 MPN/100ml
			APHA-9221F (23rd Edition)	<1.8 to >1600 MPN/100ml
			APHA-9222H (23rd Edition)	Present or Absent /100 ml
3.	Swimming Pool Water	Coliform	IS 1622	<2 to ≥1600 MPN/100ml
		Total Plate Count	IS 3328:AnnexA	≥1 CFU/ ml
			APHA-9215B (23rd Edition)	≥1 CFU/ ml
4.	Dialysis Water	Total Viable Count	IS 5402	≥1 CFU/ ml
			APHA-9215B (23rd Edition)	≥1 CFU/ ml
		Coliform	APHA-9222B (23rd Edition)	≥1 CFU /100ml
		Faecal Coliform	APHA-9222D (23rd Edition)	≥1 CFU/100ml
		Escherichia coli	APHA-9222H (23rd Edition)	Present or Absent /100 ml
		Endotoxin	Limulus amoebocyte lysate (LAL) test Ref. ISO 13959,second edition 2009-04-15	≤0.125 EU/ml - 5 EU/ml
II.	<b>ENVIRONMENT &amp; POLLUTION</b>			
1.	Waste Water	Coliform	APHA-9221B (23rd Edition)	<1.8 to >1600 MPN/100ml

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Convenor

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Program Manager

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			APHA-9222B (23rd Edition)	≥1 CFU /100ml
		Faecal Coliform	APHA-9221E (23rd Edition)	<1.8 to >1600 MPN/100ml
			APHA-9222D (23rd Edition)	≥1 CFU/100ml
		Escherichia coli	APHA-9221F (23rd Edition)	<1.8 to >1600 MPN/100ml
			APHA-9222H (23rd Edition)	Present or Absent / 100 ml
2.	Swab	Total Bacterial Count	APHA Compendium 5th Edition , Chapter 3	≥1 CFU/cm <sup>2</sup>
		Escherichia coli	APHA Compendium 5th Edition , Chapter 3	≥1 CFU/cm <sup>2</sup>
		Staphylococcus aureus	APHA Compendium 5th Edition , Chapter 3	≥1 CFU/cm <sup>2</sup>
3.	Air Monitory	Total Bacterial Count	APHA Compendium 5th Edition , Chapter 3	≥1 CFU /m <sup>3</sup>
		Yeast & Mould Count	APHA Compendium 5th Edition , Chapter 3	≥1 CFU /m <sup>3</sup>
		Staphylococcus aureus	APHA Compendium 5th Edition , Chapter 3	≥1 CFU /m <sup>3</sup>
		Total Coliform	APHA Compendium 5th Edition , Chapter 3	≥1 CFU/m <sup>3</sup>
III.	<b>FOOD AND AGRICULTURAL PRODUCTS</b>			
1.	Tea	Total Plate Count	IS 5402	≥1 CFU/g
		Yeast & Mould Count	IS 5403	≥1 CFU/g
		Escherichia coli	IS 5887 (Part I)	≥1 CFU/g
		Total Coliform	IS 5401 (Part I)	≥1 CFU/g

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<b>CHEMICAL TESTING</b>				
1.	<b>ATMOSPHERIC POLLUTION</b>			
1.	<b>Ambient Air &amp; Fugitive Air</b>	Suspended Particulate matter ( SPM)	IS 5182 (Part 4),1999 RA 2010 (1st Rev.)	20 to 20000 µg/m <sup>3</sup>
		Particulate matter (RPM) PM10	IS 5182 (Part 23): 2006 RA 2012	20 to 5000 µg/m <sup>3</sup>
		Particulate matter (PM 2.5)	USEPA 1997a 40 CFR Part 50 Appendix L	10 to 500 µg/m <sup>3</sup>
		Sulphur dioxide	IS 5182 (Part 2),2001 RA 2012 (1st Rev.)	4 to 200 µg/m <sup>3</sup>
		Oxides of Nitrogen ( NOx)	IS 5182 (Part 6),2006 RA 2012 (1st Rev.)	10 to 300 µg/m <sup>3</sup>
		Lead (Pb)	IS 5182 (Part 22),2004 RA 2009	0.01 to 1.0 µg/m <sup>3</sup>
		Ozone (O3)	IS 5182 (Part 9) 1974 (Second Reprint June'1996)	10to 80 µg/m <sup>3</sup>
		Ammonia(NH3)	SOP No.: RVB/SOP/01/10 , Indophenol Method, As per CPCB guide line	5 to 500 µg/m <sup>3</sup>
		Benzene(C6H6)	IS 5182 (Part 11 ) , 2006 RA 2012 (2nd Rev.)	1 to 5 µg/m <sup>3</sup>
		Poly Nuclear Aromatic Hydrocarbon - Benzo-a-Pyrene(BaP)	IS 5182 (Part 12 ) , 2004 RA 2009 (1st Rev.)	0.5 to 2.0 ng/m <sup>3</sup>
		Arsenic (As)	SOP No.: RVB/SOP/01/16 , (AAS Method) as per CPCB guide line	1 to 10.0 ng/ m <sup>3</sup>
		Nickel (Ni)	SOP No.: RVB/SOP/01/15 , (AAS Method) as per CPCB guide line	5 to 50 ng/ m <sup>3</sup>

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		Carbon monoxide (CO)	IS 5182 (Part 10),1999 Non dispersive infra-red (NDIR)a spectroscopy	0.625 to 1250 mg/ m <sup>3</sup>
		Chlorine	IS 5182 (Part 19),1982 RA 2009	10 to 200 µg/m <sup>3</sup>
		Methane with C1 to C5 Hydrocarbons in Air i. ii. Ethane iii. Propane iv. Acetylene v. Iso-Butane vi. Ethylene	IS 5182 (Part 17),1979 RA 2009 By Gas Chromatograph	0.714 to 7.14 mg/ m <sup>3</sup> 1.34 to 13.39 mg/ m <sup>3</sup> 1.96 to 19.64 mg m <sup>3</sup> 1.16 to 11.61 mg/ m <sup>3</sup> 2.56 to 25.59 mg/ m <sup>3</sup> 1.25 to 12.5 mg/ m <sup>3</sup>
<b>2</b>	<b>Stack Emission</b>	Particulate matter	IS 11255 : (Part 1) : 1985 RA 2009	10 to 1000 mg/Nm <sup>3</sup>
		Velocity &Flow rate	IS 11255 : (Part 3) : 2008 RA 2010 (1st Rev.)	500 to 300,000Nm <sup>3</sup> /hr
		Sulphur dioxide	IS 11255 : (Part 2) : 1985 RA - 2009	5 to 10000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen (NOx)	IS 11255 (Part 7 ),2005 RA 2012	5 to 1000 mg/Nm <sup>3</sup>
		Carbon dioxide	IS 11255 : (Part 1) : 1985 By Orsat	0.2 to 16 %
		Carbon monoxide	IS 5182 (Part 10),1999 IS 11255 : (Part 1) : 1985 By Orsat	5 to 1000 mg/Nm <sup>3</sup> 0.2 to 2 %
		Oxygen	IS 11255 : (Part 1) : 1985 By Orsat	2 to 20 %
		Lead	IS 5182 (Part 22), 2004 RA – 2009 , By AAS	0.01 to 20.0 mg/Nm <sup>3</sup>
		Temperature	IS 11255 : (Part 3): 2008	30 °C to 600 °C

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		Methane with C1 to C5 Hydrocarbons in Air i. ii. Ethane iii. Propane iv. Acetylene v. Iso-Butane vi. Ethylene	IS 5182 ( Part XVII),1979 RA 2009 By Gas Chromatograph	0.714 to 7.14 mg/m <sup>3</sup> 1.34 to 13.39 mg/m <sup>3</sup> 1.96 to 19.64 mg/m <sup>3</sup> 1.16 to 11.61 mg/m <sup>3</sup> 2.56 to 25.59 mg/m <sup>3</sup> 1.25 to 12.5 mg/m <sup>3</sup>
3	<b>Noise Monitoring</b> a. Ambient Area	dβ(A) level LMax, LMin & Leq	IS 4758, 1968	40 to 90 dβ(A)
	b. Work Place Area	dβ(A) level LMax, LMin & Leq	IS 4758, 1968	60 to 130 dβ(A)
II.	<b>FOOD AND AGRICULTURE PRODUCTS</b>			
1.	Tea	Total ash	IS 13854:1994 ISO 1575 :1987 RA 2009	3.0 % to 10.0 %
		Water soluble ash	IS 13855:1993 ISO 1576 :1988 RA 2009	30.0 % to 90.0%
		Acid insoluble ash	IS 13857:1993 ISO 1577 :1987	0.02 % to 2.0 %
		Alkalinity of water soluble ash as K <sub>2</sub> O	IS 13856:1993 ISO 1578 :1975 RA 2009	0.5 % to 4.0 %
		Water extract	IS 13862:1999 ISO 9768 :1994 RA 2009	25.0 % to 50.0 %
		Crude fibre	IS 10226 (Part 1):1982 ISO: 15598 :1999 (E) RA 2010	5.0 % to 30.0 %
		Determination of Loss	IS 13853 :1994 ISO 1573:1980 RA 2009	2.0 % to 12.0 %
		Lead	IS 12074 :1987	1.0 to 15.0 mg/kg
		Copper	IS 11123 :1984	5.0 to 200 mg/kg

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2.	<b>Coffee (Rosted/Ground/Coffee powder)</b>	Total ash	IS: 3077, 1992 (Annex F) RA 1998	1.0 % to 12.0 %
		Caffeine content	IS: 3077, 1992 (Annex L) RA 1998	0.50 % to 10.0%
		Acid insoluble ash	IS: 3077, 1992 (Annex G) RA 1998	0.02 % to 2.0%
		Alkalinity of soluble ash in millilitres of 0.1N hydrochloric acid per gram of material (on dry basis) ml/g	IS: 3077, 1992 (Annex J) RA 1998	3.0 ml to 6.0 ml
		Water soluble ash	IS 3077, 1992 (Annex H) RA 1998	50.0% to 90.0%
		Water soluble matter	IS 3077, 1992 (Annex K) RA 1998	20.0% to 40%
		Solubility in cold water at 16°C±2°C	IS 2791:1992 RA 2009	Soluble with moderate stirring in 2 to 5 minutes.
		Solubility in Boilingwater	IS 2791:1992 RA 2009	Dissolved readily 20sec to 50 sec.
	Moisture	IS 3077, 1992 (Annex E) RA 1998	2.0 % to 10.0 %	
<b>III.</b>	<b>SOLID FUELS</b>			
1.	<b>Coal &amp; Coke &amp; Other Solid Fuel</b>	Ash	i) IS 1350 (Part I) 1984 RA 2013	0.5 % to 70.0 %
			ii) ASTM D 3174 : 2012	0.5 % to 70.0 %
		Moisture (Air Dry Basis)	i) IS 1350 (Part I) 1984 RA 2013	0.5 % to 40.0 %
			ii) ASTM D 3173 : 2017	0.5 % to 40.0 %
		Volatile matter	i) IS 1350 (Part I) 1984 RA . 2013	1.0 % to 60.0 %
			ii) ASTM D 3175 : 2017	1.0 % to 60.0 %
	Fixed carbon	IS 1350 (Part I) 1984 RA 2013	By Difference	

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		Determination of Gross Calorific Value	i) IS 1350 (Part II)- 1975 RA 2013	2000to 8500 kcal/kg
			ii) ASTM D 5865 : 2013	2000to 8500 kcal/kg
		Determination of Total Sulphur	IS 1350 (Part 3) 1969 RA 2011	0.2 % to 10.0 %
<b>IV.</b>	<b>ORES &amp; MINERALS</b>			
<b>1.</b>	<b>Iron Ore</b>	Iron (Fe)	IS 1493 (Part 1), 1981 RA 2011	30.0 to 80.0 %
		Silica (SiO <sub>2</sub> )	IS 1493 (Part-1),1981 RA 2011	0.5 to 10.0 %
		Aluminium Oxide (Al <sub>2</sub> O <sub>3</sub> )	IS 1493 (Part 1), 1981 RA 2011	0.5 to 10.0 %
		Phosphorous (P)	IS 1493 (Part 1), 1981 RA 2011	0.05 to 1.0 %
		Sulphur (S)	IS 1493 (Part 1), 1981 RA 2011	0.002 to 0.1%
		Moisture	IS 1493 (Part 1), 1981 RA 2011	0.5 to 20.0 %
<b>2.</b>	<b>Manganese Ore</b>	Manganese (Mn)	IS 1473, 2004 RA 2011	20.0 to 60.0 %
		Manganese dioxide (MnO <sub>2</sub> )	IS 1473, 2004 RA 2011	30.0 to 95.0 %
		Iron (Fe)	IS 1473, 2004 RA 2011	0.5 to 15.0 %
		Silica (SiO <sub>2</sub> )	IS 1473, 2004 RA 2011	0.5 to 10.0 %
		Aluminium Oxide (Al <sub>2</sub> O <sub>3</sub> )	IS 1473, 2004 RA 2011	0.5 to 10.0 %
		Phosphorous (P)	IS 1473, 2004 RA 2011	0.05 to 1.0 %
		Sulphur (S)	IS 1473, 2004 RA 2011	0.002 to 0.1 %
		Moisture	IS 1473, 2004 RA 2011	0.5 to 20.0 %
<b>V.</b>	<b>WATER</b>			
<b>1.</b>	<b>Potable Water</b>	Turbidity	IS 3025 (Part 10) : 1984 RA 2012 (1st Rev.)	1 to 1000 NTU
		Total Dissolved Solids	IS 3025 (Part 16) : 1984 RA 2012 (1st Rev.)	5 to 1000 mg/l



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		pH Value	IS. 3025 (Part 11) :1983 RA 2012 (1st Rev.)	2 to 12
		Conductivity	IS. 3025 (Part 14) :2013	5 to 2000 µs/cm
		Arsenic	IS 3025 (Part 37) : 1988 RA 2009	0.002 to 2.0 mg/l
		Mercury	IS 3025 (Part 48) : 1994 RA 2009	0.001 to 0.2 mg/l
		Lead	IS 3025 (Part 47) : 1994 RA 2009	0.01 to 10.0 mg/l
		Iron	IS 3025 (Part 53) : 2003	0.10 to 100 mg/l
		Cadmium	IS 3025 (Part 41) : 1992 RA 2009	0.002 to 4.0 mg/l
		Chromium Hexavalent	IS 3025 (Part 52) : 2003	0.05 to 50 mg/l
		Chromium	IS 3025 (Part 52) : 2003	0.05 to 50 mg/l
		Copper	IS 3025 (Part 42) : 1992 RA 2009 (1st Rev)	0.05 to 5.0 mg/l
		Zinc	IS 3025 (Part 49) : 1994 RA 2009 (1st Rev)	0.05 to 20 mg/l
		Boron	IS 3025(Part 57) : 2005	0.2 to 10 mg/l
		Cyanide	IS 3025 (Part 27) : 1986 RA 2009 (1st Rev)	0.02 to 10.0 mg/l
		Chloride	IS 3025 (Part 32) : 1988 RA 2009 (1st Rev)	5 to 1000 mg/l
		Fluoride	IS 3025 (Part 60) : 2008	0.10 to 20.0 mg/l
		Sulphate	RA 3025 (Part 24)- 1986, RA 2009 (1st Rev)	5 to 1000 mg/l
		Phenolic Compound	RA 3025 (Part-43) 1992 RA 2009 (1st Rev)	0.001 to 50 mg/l
		Total Hardness	IS 3025 (Part 21) 2009 RA 2009 (1st Rev)	5.0 to 1000 mg/l
		Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23)1986 RA 2009 (1st Rev)	5 to 1000 mg/l
		Calcium	RA 3025 (Part 40) 1991 RA 2009 (Amm: 1)	2 to 500 mg/l

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		Magnesium	IS 3025 (Part 46) 1994 RA 2009 (1st Rev)	2.0 to 500 mg/l
		Sodium	IS 3025 (Part 45) 1993 RA 2009 (1st Rev)	1 to 500 mg/l
		Potassium	IS 3025 (Part 45) 1993 RA 2009 (1st Rev)	1 to 500 mg/l
		Nitrate	IS 3025 (Part 34): 1988 RA 2009 (1st Rev)	1.0 to 500 mg/l
		Silica	IS 3025 (Part-35) 1988 RA 2009 (1st Rev)	5 to 100 mg/l
		Residual free chlorine	IS 3025 (Part 26) 1986 RA 2009 (1st Rev)	0.1 to 10 mg/l
		Manganese	IS 3025 (Part 59) : 2006	0.50 to 10.0 mg/l
		Aluminium	IS 3025 (Part 55): 2003	0.03 to 2.0 mg/l
		Color	IS 3025 (Part 4) 1983 RA 2012 (1st Rev.)	1 to 50 HU
		Anionic Detergents (as MBAS)	IS 13428: 2005, Annex K	0.05 to 5.0 mg/l
		Barium	IS 13428:2005 Annex-F	0.5 to 5.0 mg/l
		Selenium	IS 3025 (Part 56): 2003	0.01to 5.0 mg/l
		Silver	IS 13428, Annex J:2005	0.05 to 5.0 mg/l
		Sulphide	IS 3025 (Part 29): 1986 RA 2009	0.05 to 5.0 mg/l
		Molybdenum	IS 3025 (Part 2) 2004 RA 2009	0.05 to 5.0 mg/l
		Odour	IS 3025 (Part 5) 1983 RA 2012 (1st Rev.)	Qualitative
		Ammonia (as Total Ammonia-N)	IS 3025 (Part 34)1988 RA 2009 (1st Rev)	0.2 to 2.0 mg/l
		Nickel	IS:3025(Part 54):2003	0.02to 5.0 mg/l
		Antimony	Annex G of -IS:13428:2005	0.1to 1.0
2.	Swimming Pool Water	Turbidity	IS 3025 (Part 10) : 1984 RA 2012 (1st Rev.)	1 to 1000 NTU

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		pH Value	IS 3025 (Part 11) :1983 RA 2012 (1st Rev)	2 to 12
		Total Dissolved Solids	IS 3025 (Part 16) : 1984 RA 2012 (1st Rev.)	5 to 1000 mg/l
		Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23)1986 RA 2009	5 to 1000 mg/l
		Lead	IS 3025 (Part 47) : 1994 RA 2009 (1st Rev)	0.01 to 10.0 mg/l
		Iron	IS 3025 (Part 53) : 2003	0.10 to 100 mg/l
		Residual free chlorine	IS 3025 (Part 26) 1986 RA 2009 (1st Rev)	0.1 to 10.0 mg/l
		Aluminium	IS 3025 (Part 55): 2003	0.03 to 5.0 mg/l
		Chloride	IS 3025 (Part 32) : 1988 RA 2009 (1st Rev)	5 to 1000 mg/l
		Colour	IS 3025 (Part 4) 1983 RA 2012 (1st Rev)	1 to 50 HU
		Oxygen Absorbed in 4 hrs at 37°C	IS 3025 (Part 63) :2007	0.1 to 10mg/l
<b>3.</b>	<b>Dialysis Water</b>	Sodium	IS 3025 (Part 45) 1993 RA 2009 (1st Rev)	1 to 500 mg/l
		Potassium	IS 3025 (Part 45) 1993 RA 2009 (1st Rev)	1 to 500 mg/l
		Free Chlorine	IS 3025 (Part 26) 1986 RA 2009 (1st Rev)	0.1 to 5.0 mg/l
		Silver	IS 13428, Annex J:2005	0.005 to 5.0 mg/l
		Calcium	IS 3025 (Part 40) 1991 RA 2009 (Amm: 1)	2 to 500 mg/l
		Magnesium	IS 3025 (Part 46) 1994 RA 2009 (1st Rev)	2 to 500 mg/l
		Sulphates	RA 3025 (Part 24) 1986, Ref. 2009	5 to 1000 mg/l
		Nitrate	IS 3025 (Part 34): 1988 RA 2009 (1st Rev)	1.0 to 500 mg/l

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		Copper	IS 3025 (Part 42) : 1992 RA 2009 (1st Rev)	0.05 to 5.0 mg/l
		Fluoride	IS 3025 (Part 60) : 2008	0.10 to 20.0 mg/l
		Mercury	IS 3025 (Part 48) : 1994 RA 2009 (1st Rev)	0.0002 to 0.2 mg/l
		Cadmium	IS 3025 (Part 41) : 1992 RA 2009 (1st Rev)	0.001 to 4.0 mg/l
		Selenium	IS 3025 (Part 56) : 2003	0.01 to 5.0 mg/l
		Chromium	IS 3025 (Part 52) : 2003	0.01 to 50 mg/l
		Arsenic	IS 3025 (Part 37) : 1988 RA 2009 (1st Rev)	0.002 to 2.0 mg/l
		Lead	IS 3025 (Part 47) : 1994 RA 2009 (1st Rev)	0.005 to 10.0 mg/l
		Zinc	IS 3025 (Part 49) : 1994 RA 2009 (1st Rev)	0.05 to 20 mg/l
		Aluminium	IS 3025 (Part 55) : 2003	0.01 to 5.0 mg/l
		Antimony	APHA 23rd Edition 3111B	0.006 to 1.0 mg/l
		Barium	APHA 23rd Edition 3111D	0.10 to 5 mg/l
		Chloramines	IS 3025 (Part 26) : 1986 RA 2009 (1st Rev)	0.1 to 1.0 mg/l
4.	Cooling Tower Water	Turbidity	IS 3025 (Part 10) : 1984 RA 2012 (1st Rev.)	1 to 1000 NTU
		pH Value	RA 3025 (Part 11) :1984 RA 2012 (1st Rev)	2 to 12
		Residual free chlorine	IS 3025 (Part 26) : 1986 RA 2009 (1st Rev)	0.1 to 10.0 mg/l
		Total Hardness	IS 3025 (Part 21) 2009 RA 2006	5.0 to 1000 mg/l
		Temporary Hardness	--	
		Chloride	IS 3025 (Part 32) : 1988 RA 2009 (1st Rev)	5 to 1000 mg/l
		Iron	IS 3025 (Part 53) : 2003	0.10 to 100 mg/l
		Manganese	IS 3025 (Part 59) : 2006	0.10 to 10.0 mg/l

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		O2 Absorbed in 4 hours.	IS 3025 (Part 63): 2007	0.1 to 10
		COD	APHA 23rd Edition 5220 B	4 to 500mg/l
		Total Dissolved Solids	IS 3025 (Part 16) : 1984 RA 2012 (1st Rev)	5 to 1000 mg/l
		Free Carbondioxide as CO2	APHA 23rd Edition 4500 - CO2 C/ IS 3025 (Part 61), 2008	1 to 100 mg/l
		Sulphates	RA 3025 (Part 24)- 1986, RA 2009	5 to 1000 mg/l
		Silica	IS 3025 (Part 35) 1988 RA 2009 (1st Rev)	5 to 100 mg/l
<b>5.</b>	<b>Surface Water</b>	pH Value	RA 3025 (Part 11) :1983 RA 2012 (1st Rev)	2 to 12
		Dissolved Oxygen	APHA 23rd Edition 4500 OC RA 3025 (Part-38) 1989 RA 1999	1.0 to 8.0 mg/l
		Biochemical Oxygen Demand (BOD)	RA 3025 ( Part 44 ) 1993 RA 2009	5 to 500 mg/l
		Color	IS 3025 (Part 4) 1983 RA 2012 (1st Rev)	1 to 50 HU
		Fluoride	IS 3025 (Part 60) : 2008	0.10 to 20.0 mg/l
		Cadmium	IS 3025 (Part 41) : 1992 RA 2009 (1st Rev)	0.002to 4.0 mg/l
		Chloride	IS 3025 (Part 32) : 1988 RA 2009 (1st Rev)	5 to 1000 mg/l
		Chromium as Cr+6	IS 3025 (Part 52) : 2003	0.04 to 50 mg/l
		Cyanide	IS 3025 (Part 27) : 1986 RA 2009 (1st Rev)	0.02 to 10.0 mg/l
		Total Dissolved Solids	IS 3025 (Part 16) : 1984 RA 2012 (1st Rev.)	5 to 2000 mg/l
		Selenium	IS 3025 (Part 56): 2003	0.01 to 5.0 mg/l
		Sulphates	RA 3025 (Part 24)- 1986, RA 2009 (1st Rev)	5 to 1000 mg/l

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		Lead	IS 3025 (Part 47) : 1994 RA 2009 (1st Rev)	0.01 to 10.0 mg/l
		Copper	IS 3025 (Part 42) : 1992 RA 2009 (1st Rev)	0.05 to 5.0 mg/l
		Arsenic	IS 3025 (Part 37) : 1988 RA 2009 (1st Rev)	0.002 to 2.0 mg/l
		Iron	IS 3025 (Part 53) : 2003	0.10 to 100 mg/l
		Phenolic Compound	RA 3025 (Part 43) 1992 RA 2009 (1st Rev)	0.001to 50 mg/l
		Zinc	IS 3025 (Part 49) : 1994 RA 2009 (1st Rev)	0.05 to 20 mg/l
		Anionic Detergents (as MBAS)	IS 13428, Annex K	0.05 to 5.0 mg/l
		Oil and Grease	APHA 23rd Edition 5520 B RA 3025 (Part 39) :1991 RA 2009 (Amm: 1)	0.1 to 50 mg/l
		Nitrate	IS 3025 (Part 34): 1988	1.0 to 500 mg/l
6.	Reagent Grade water/Distilled Water	Colour retention of KMnO <sub>4</sub>	Annex A IS:1070 ; 1992	10 to 60mi
		pH Value as 25°C	RA 3025 (Part 14) :1983	2 to 12
		Total Solids	IS 3025 (Part 15) 1984 RA 2009 (1st Rev.)	1.0 to 100 mg/l
		Conductivity as 25°C	IS 3025 (Part 14) : 1984	1 to 10 µS/cm
		Silica as SiO <sub>2</sub>	IS 3025 (Part 35) : 1998 RA 2009 (1st Rev.)	0.10 to 10 mg/l
VI.	<b>RESIDUES IN WATER</b>			
1.	Potable Water (Pesticide)	Alachlor	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.02 to 5.0 µg/l
		Aldrin	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l

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		Dieldrin	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Alpha HCH	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Beta HCH	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Butachlor	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.02 to 5.0 µg/l
		Delta HCH	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		2,4-Dichlorophenoxyacetic acid	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.02to 5.0 µg/l
		op - DDT	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		pp - DDE	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		pp – DDD	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Endosulfan (alpha )	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Endosulfan (beta )	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
		Endosulfan (sulphate)	As per SOP with ref. of APHA- 6630 B	0.01 to 5.0 µg/l

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			(23rd edition)	
		Ethion	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.02 to 5.0 µg/l
		Gamma – HCH(Lindane)	As per SOP with ref. of APHA- 6630 B (23rd edition)	0.01 to 5.0 µg/l
<b>VII. POLLUTION AND ENVIRONMENT</b>				
<b>1.</b>	<b>Waste Water</b>	Turbidity	APHA 23rd Edition 2130B	10 to 1000 NTU
		Total Suspended Solids	APHA 23rd Edition 2540D	10 to 1000 mg/l
		pH Value	APHA 23rd Edition 4500-H+ B	2.0 to 12.0
		Conductivity	APHA 23rd Edition 2510B	20 to 2000 µmhos/cm
		Oil and Grease	APHA 23rd Edition 5520 B	6 to 50 mg/l
		Ammoniacal Nitrogen as N	APHA 23rd Edition 4500 NH3 F	0.4 to 100 mg/l
		Kjeldahl Nitrogen as N	APHA 23rd Edition 4500 Norg A	0.4 to 100 mg/l
		Biochemical Oxygen Demand (BOD)	RA 3025 (Part 44 ) 1993	5 to 500 mg/l
		Chemical Oxygen Demand (COD)	APHA 23rd Edition 5220B	20 to 5000 mg/l
		Arsenic	APHA 23rd Edition ,3114C	0.002 to 2.0 mg/l
		Mercury	APHA 23rd Edition 3112B	0.001 to 1.0 mg/l
		Lead	APHA 23rd Edition ,3111B	0.1 to 10.0 mg/l
		Iron	APHA 23rd Edition 3500-Fe B	0.10 to 100 mg/l
		Cadmium	APHA 23rd Edition,3111B	0.01 to 4.0 mg/l
		Chromium Hexavalent	APHA 23rd Edition, 3500-Cr B	0.04 to 10 mg/l
		Chromium	APHA 23rd Edition, 3111 B	0.1 to 50 mg/l
		Copper	APHA 23rd Edition ,3111B	0.05 to 5.0 mg/l
		Zinc	APHA 23rd Edition ,3111B	0.05 to 20 mg/l

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		Nickel	APHA 23rd Edition , 3111 B	0.1 to 6.0 mg/l
		Boron	APHA 23rd Edition ,4500B	0.2 to 10.0 mg/l
		Cyanide	APHA 23rd Edition ,4500 CN E& F	0.1 to 10.0 mg/l
		Chloride	APHA 23rd Edition 4500 Cl- B	10 to 1000 mg/l
		Fluoride	APHA 23rd Edition 4500 F- C	0.10 to 20.0 mg/l
		Phosphorous as P	APHA 23rd Edition 4500 PD	0.05 to 10.0 mg/l
		Sulphates	APHA 23rd Edition 4500 SO42- E	5 to 1000 mg/l
		Phenolic Compound	APHA 23rd Edition 5530 C	0.01to 5.0 mg/l
		Total Hardness	APHA 23rd Edition 2340 C	5.0 to 1000 mg/l
		Alkalinity as CaCO3	APHA 23rd Edition 2320 B	5.0 to 1000 mg/l
		Calcium	APHA 23rd Edition 3500- Ca B	2.0 to 1000 mg/l
		Magnesium	APHA 23rd Edition 3500 Mg B	2.0 to 1000 mg/l
		Sodium	APHA 23rd Edition 3500 Na B	5.0 to 500 mg/l
		Potassium	APHA 23rd Edition 3500 K B	5.0 to 500 mg/l
		Nitrate	APHA 23rd Edition 4500 NO3- D	1.0 to 500 mg/l
<b>VIII.</b>	<b>SOIL AND ROCK</b>			
<b>1.</b>	<b>Soil &amp; Sludge</b>	Cation Exchange Capacity (CEC)	IS 2720 (Part 24) : 1976	3 to 100 meq/100g
		Electrical Conductivity (EC)	IS 14767 : 2000	1 to 200 mili mhos/cm
		Nitrogen available	IS 14684 : 1999, RA 2008	0.001 to 1.0%

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		Organic carbon/matter (chemical method)	IS 2720 (Part 22) : 1972	0.1 to 10%
		pH	IS 2720 (Part 26) : 1987	2 to 12
		Phosphorous (available)	SOP No.: RVB/SOP/05/14 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 95-99	1 to 100 mg/kg
		Potassium	SOP No.: RVB/SOP/05/32 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 99-100	10 to 300 mg/kg
		Sodium	IS 9497 - 1980	10 to 300 mg/kg
		Soil moisture	IS 2720 (Part 2) : 1973	2 to 40%
		TKN	IS 14684 : 1999	0.01 to 5%
		Calcium	SOP No.: RVB/SOP/05/28 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 102-104	0.1 to 10%
		Calcium carbonate	IS 2720 (Part 23) : 1976	0.1 to 10%
		Chloride	IS 3025 (Part 32), 1988	0.005 to 5%
		Heavy metal Acid Extraction Method	EPA 3050 B	
		Lead	APHA, 23rd Edition, 3111 B	0.05 to 50 mg/kg
		Cadmium	APHA, 23rd Edition, 3111 B	0.05 to 50 mg/kg
		Chromium	APHA, 23rd Edition, 3111 B	0.05 to 50 mg/kg
		Nickel	APHA, 23rd Edition, 3111 B	0.05 to 50 mg/kg
		Copper	APHA, 23rd Edition, 3111 B	0.05 to 50 mg/kg
		Arsenic	APHA, 23rd Edition, 3114 C	0.5to 50 mg/kg

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		Mercury	APHA, 23rd Edition, 3112 B	0.01to 50 mg/kg
		Magnesium	SOP No. : RVB/SOP/05/27 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 104-105	0.1 to 10%
		Soil texture analysis ( % of sand, Silt & clay)	SOP No. : RVB/SOP/05/26 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 67-70	N.A
		Nitrate	SOP No. : RVB/SOP/05/25 as per ICAR, 2011 (Dept. of Agriculture &Cooperation, Ministry of Agriculture, Govt. of India) Page: 92-93	10 to 100 mg/kg
		Sulphate	IS 2720 (Part 27) : 1977	5 to 500 mg/kg
		Sulphur	IS:14685:1999	0.01 to 10%
		SAR	IS 11624 - 1986	1 to 100
		LOI	IS 1760 (Part 1) : 1991	4.0 to 50.0%
		SiO <sub>2</sub>	IS 1760 (Part 2) : 1991 RA 2011	0.20 to 20.0%
		CaO	IS 1760 (Part 3) : 1992 RA 2017	6.0 to 60.0%
		MgO	IS 1760 (Part 3) : 1992 RA 2017	0.15 to 30.0%