

**Laboratory** Excel Enviro Tech, TF-2 & FF-1, Sun House, Off. Ashram Road, Ahmedabad, Gujarat

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

**Certificate Number** TC-5892 (In lieu of T-3482)

Page 1 of 8

**Validity** 26.06.2017 to 25.06.2019

Last Amended on 30.06.2017

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**

AT LABORATORY				
I.	<b>WATER</b>			
1.	<b>Ground and Surface Water</b>	pH	IS 3025 (Part 11) : 1983 (RA 2012) (Electrometric Method)	2.0 to 12.0
		Temperature	APHA 22 <sup>nd</sup> Edition, 2012 2550 B	1 °C to 60 °C
		Color	APHA, 22ND EDITION 2012 Spectrophotometric - Single Wavelength Method 2120-C	5 Co. Pt. Units to 300 Co. Pt. Units
		Odour	IS 3025 (Part 5):1983 (RA 2002)	Qualitative
		Turbidity	IS 3025 (Part 10):1984 (RA 2012) Nephelometric Method	2.0 NTU to 100 NTU
		Electrical Conductivity	IS 3025 (Part 14):2013	2 µS/cm to 50000 µS/cm
		Total Dissolved solids	IS 3025 (Part 16):1984 (RA 2006) Gravimetric Method	5 mg/l to 20000 mg/l
		Total Solids	APHA, 22ND EDITION 2012 Gravimetric Method 2540 B	5 mg/l to 20000 mg/l
		Total Suspended solids	IS 3025 (Part 17):1984 (RA 2012) Gravimetric Method	2 mg/l to 1000 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21): 2009 EDTA Titrimetric Method	5 mg/l to 5000 mg/l
		Calcium Hardness as CaCO <sub>3</sub>	APHA, 22ND EDITION 2012 EDTA Titrimetric 3500-Ca- B	5 mg/l to 2500 mg/l

**Anita Rani  
Convenor**

**N. Venkateswaran  
Program Director**

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Page 2 of 8

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		Magnesium Hardness as CaCO <sub>3</sub>	APHA, 22ND EDITION 2012 Calculation Method 3500-Mg-B	5 mg/l to 2000 mg/l
		Calcium as Ca	APHA, 22ND EDITION 2012 EDTA Titrimetric 3500-Ca- B	2 mg/l to 500 mg/l
		Magnesium as Mg	APHA, 22ND EDITION 2012 Calculation Method 3500-Mg-B	2 mg/l to 500 mg/l
		Chloride as Cl	IS 3025 (Part 32):1988 (RA 2009) Argentometric Method	2 mg/l to 5000 mg/l
		Sulphate as SO <sub>4</sub>	APHA, 22ND EDITION 2012 Turbidimetric Method 4500-SO42- E	5 mg/l to 2000 mg/l
		Fluoride as F-	APHA, 22ND EDITION 2012 SPANDS Method 4500-F- D	0.2 mg/l to 50 mg/l
		Total Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23):1986 (RA 2009) Indicator Titration Method	5 mg/l to 5000 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22):1986 (RA 2009) Indicator Titration Method	5 mg/l to 5000 mg/l
		Residual free Chlorine	IS 3025 (Part 26):1986 (RA 2009) Iodometric Method	0.1 mg/l to 10 mg/l
		Oil & Grease	APHA, 22 <sup>ND</sup> EDITION 2012 Partition Gravimetric Method -5520 B	1 mg/l to 50 mg/l
		Ammonical Nitrogen as NH <sub>3</sub> -N	IS 3025 (Part 34):1988 (RA 2009) Titrimetric Method	0.3 mg/l to 50 mg/l
		Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	APHA, 22ND EDITION 2012 Direct Photometric Method 5530-D	0.01 mg/l to 20 mg/l

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Page 3 of 8

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		Chemical Oxygen Demand	IS 3025 (Part 58):2006 (RA 2012) Open Reflux Method	4 mg/l to 2000 mg/l
		Bio Chemical Oxygen Demand @ 27 °C for 3 Days	IS 3025 (Part 44):1993 (RA 2009) Oxygen Depletion method	2 mg/l to 500 mg/l
		Dissolved Oxygen (DO)	APHA, 22ND EDITION 2012 Azide Modification-4500- O-C	0.1 mg/l to 10.0 mg/l
		Nitrate as NO <sub>3</sub> <sup>-</sup>	IS 3025 (Part 34):1988 (RA 2003) (Chromotropic Acid Method)	0.5 mg/l to 50 mg/l
		Phosphate as PO <sub>4</sub>	IS 3025 (Part 31):1988 (RA 2009) SnCl <sub>2</sub> Method	0.5 mg/l to 50 mg/l
		Reactive Silica as SiO <sub>2</sub>	IS 3025 (Part 35):1988 (RA 2009) Molybdosilicate Method	0.5 mg/l to 50 mg/l
		Sulphide as S <sup>-2</sup>	APHA, 22ND EDITION 2012 Iodometric Method 4500-S <sup>-2</sup> F	1.0 mg/l to 20 mg/l
		Sodium as Na	IS 3025 (Part 45):1993 (RA 2009) Flame Photometry Method	1.0 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45):1993 (RA 2009) Flame Photometry Method	1.0 mg/l to 1000 mg/l
		Boron as B	IS 3025 (Part 57):2005 (RA 2010) Colorimetric Curcumine Method	0.05 mg/l to 20 mg/l
		Hexa valent Chromium as Cr <sup>+6</sup>	IS 3025(Part 52):2003 (RA 2003) Diphenylcarbazide method	0.05 mg/l to 20 mg/l

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Page 4 of 8

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		Iron as Fe	IS 3025 (Part 53):2003 (RA 2009) 1, 10 Phenonthroline Method	0.1 mg/l to 50 mg/l
<b>II.</b>	<b>POLLUTION &amp; ENVIRONMENT</b>			
<b>1.</b>	<b>Wastewater (Sewage /effluent)</b>	pH	IS 3025 (Part 11) :1983 (RA 2012) (Electrometric Method)	2.0 to 12.0
		Temperature	APHA, 22 <sup>nd</sup> Edition, 2012 2550 B	1 °C to 60 °C
		Color	APHA, 22ND EDITION 2012 Spectrophotometric - Single Wavelength Method 2120-C	5 Co. pt. Units to 5000 Co. pt. Units
		Turbidity	IS 3025 (Part 10):1984 (RA 2012) Nephelometric Method	2 NTU to 190 NTU
		Electrical Conductivity	IS 3025 (Part 14):2013	2 µS/cm to 50000 µS/cm
		Total Dissolved solids	IS 3025 (Part 16):1984 (RA 2006) Gravimetric Method	5 mg/l to 300000 mg/l
		Total Solids	APHA, 22ND EDITION 2012 Gravimetric Method 2540 B	5 mg/l to 300000 mg/l
		Total Suspended solids	IS 3025 (Part 17):1984 (RA 2012) Gravimetric Method	2 mg/l to 20000 mg/l
		Total Hardness as CaCO <sub>3</sub>	IS 3025 (Part 21): 2009 EDTA Titrimetric Method	5 mg/l to 5000 mg/l
		Calcium Hardness as CaCO <sub>3</sub>	APHA, 22ND EDITION 2012 EDTA Titrimetric 3500-Ca- B	5 mg/l to 2500 mg/l
		Magnesium Hardness as CaCO <sub>3</sub>	APHA, 22ND EDITION 2012 Calculation Method 3500-Mg-B	5 mg/l to 2000 mg/l

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Page 5 of 8

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		Calcium as Ca	APHA, 22ND EDITION 2012 EDTA Titrimetric 3500-Ca- B	2 mg/l to 2400 mg/l
		Magnesium as Mg	APHA, 22ND EDITION 2012 Calculation Method 3500-Mg-B	2 mg/l to 1000 mg/l
		Chloride as Cl	IS 3025 (Part 32):1988 (RA 2009) Argentometric Method	2 mg/l to 40000 mg/l
		Sulphate as SO <sub>4</sub>	APHA, 22ND EDITION 2012 Turbidimetric Method 4500-SO <sub>4</sub> <sup>2-</sup> E	5 mg/l to 50000 mg/l
		Fluoride as F <sup>-</sup>	APHA, 22ND EDITION 2012 SPANDS Method 4500-F, D	0.2 mg/l to 100 mg/l
		Total Alkalinity as CaCO <sub>3</sub>	IS 3025 (Part 23):1986 (RA 2009) Indicator Titration Method	5 mg/l to 5000 mg/l
		Acidity as CaCO <sub>3</sub>	IS 3025 (Part 22):1986 (RA 2009) Indicator Titration Method	5 mg/l to 5000 mg/l
		Residual Free Chlorine	IS 3025 (Part 26):1986 (RA 2009) Iodometric Method	1 mg/l to 50 mg/l
		Oil & Grease	APHA, 22 <sup>ND</sup> EDITION 2012 Partition Gravimetric Method -5520 B	1 mg/l to 500 mg/l
		Ammonical Nitrogen as NH <sub>3</sub> -N	IS 3025 (Part 34):1988 (RA 2009) Titrimetric Method	5 mg/l to 10000 mg/l
		Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	APHA, 22ND EDITION 2012 Direct Photometric Method 5530-D	0.01 mg/l to 100 mg/l
		Chemical Oxygen Demand	IS 3025 (Part 58):2006 (RA 2012) Open Reflux Method	4 to 300000

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Page 6 of 8

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		Bio Chemical Oxygen Demand @ 27 °C for 3 Days	IS 3025 (Part 44):1993 (RA 2009) Oxygen Depletion method	2 mg/l to 50000 mg/l
		Dissolved Oxygen (DO)	APHA, 22ND EDITION 2012 Azide Modification- 4500- O-C	0.1 mg/l to 10 mg/l
		Nitrate as NO <sub>3</sub> <sup>-</sup>	IS 3025 (Part 34):1988 (RA 2003) (Chromotropic Acid Method)	0.5 mg/l to 100 mg/l
		Phosphate as PO <sub>4</sub>	IS 3025 (Part 31):1988 (RA 2009) SnCl <sub>2</sub> Method	0.5 mg/l to 100 mg/l
		Sulphide as S <sup>-2</sup>	APHA, 22ND EDITION 2012 Iodometric Method 4500-S <sup>-2</sup> F	1 mg/l to 100 mg/l
		Sodium as Na	IS 3025 (Part 45):1993 (RA 2009) Flame Photometry Method	1 mg/l to 1000 mg/l
		Potassium as K	IS 3025 (Part 45):1993 (RA 2009) Flame Photometry Method	1 mg/l to 1000 mg/l
		Boron as B	IS 3025 (Part 57):2005 (RA 2010) Colorimetric Curcumine Method	0.05 mg/l to 50 mg/l
		Hexa valent Chromium as Cr <sup>+6</sup>	IS 3025(Part 52):2003 (RA 2003) Diphenylcarbazide method	0.05 mg/l to 20 mg/l
		Reactive Silica as SiO <sub>2</sub>	IS 3025 (Part 35):1988 (RA 2009) Molybdosilicate Method	0.5 mg/l to 50 mg/l
		Iron as Fe	IS 3025 (Part 53):2003 (RA 2009) 1, 10 Phenonhroline Method	0.1 mg/l to 50mg/l

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Page 7 of 8

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<b>III.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Stack emission</b>	Particulate Matter as PM	IS 11255 (Part 1) : 1985 (RA 2003) IS 11255 (Part 3) : 2008 Thimble Sampling Method	5 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Sulphur Dioxide as SO <sub>2</sub>	IS 11255 (Part 2) : 1985 (RA 2009) IPA- Thorin Method	3 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen as NO <sub>x</sub>	IS 11255 (Part 7) : 2005 (RA 2012)	2 mg/Nm <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
		Carbon Dioxide as CO <sub>2</sub>	IS 13270 :1992 (RA 2003) Orsat Analysis	0.2 % to 25 %
		Oxygen as O <sub>2</sub>	IS 13270 :1992 (RA 2003) Orsat Analysis	0.2 % to 25 %
		NH <sub>3</sub> ( Ammonia)	IS 11255 (Part 6) : 1999 (RA 2003) (Titration method)	5 mg/Nm <sup>3</sup> to 300 mg/Nm <sup>3</sup>
<b>2.</b>	<b>Ambient Air</b>	Particulate Matter (size less than 10 µm) as PM10	IS 5182 (Part 23): 2006 (RA 2012)	10 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Particulate Matter (size less than 2.5 µm) as PM 2.5	Lab SOP 37 Dated 01-Jul-2014 (Based on CPCB NAAQS Vol.1 May, 2011 method)	10 µg/m <sup>3</sup> to 250 µg/m <sup>3</sup>
		Sulphur Dioxide as SO <sub>2</sub>	IS 5182( Part-2): 2001 (RA 2012)	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Nitrogen Dioxide as NO <sub>2</sub>	IS 5182 (Part 6) : 2006 (RA 2012)	6 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		NH <sub>3</sub> (Ammonia)	APHA Air- 3 <sup>rd</sup> Edition, 1989 Method 401 (Indophenol Blue Method)	5 µg/m <sup>3</sup> to 700 µg/m <sup>3</sup>
		Cl <sub>2</sub> (Chlorine)	IS 5182 (Part 19) :1982 (RA 2003) (Methyl orange method)	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>

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Page 8 of 8

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<b>AT SITE</b>				
<b>I.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Ambient Air</b>	Ambient Noise	IS 9989 : 1981 (RA 2001)	30 dB(A) to 130 dB(A)
		Source Noise (D. G. Sets)	IS 4758 : 1968 (RA 2002)	30 dB(A) to 130 dB(A)

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