

Laboratory **Regional Laboratory, Gujarat Pollution Control Board, Shed No.C-1/119/3, GIDC Phase-II, Narmada Nagar, Bharuch, Gujarat**

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

Certificate Number **TC-7844**

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Validity **11.09.2018 to 10.09.2020**

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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
<b><u>BIOLOGICAL TESTING</u></b>				
<b>I.</b>	<b>WATER</b>			
<b>1.</b>	<b>Ground water/ surface water</b>	Estimation of Total Coliform (MPN)	9221 B APHA 23 <sup>rd</sup> edition B & C	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>
			IS 1622-1981	<2 to 1600 MPN/100ml
		Estimation of fecal Coliform (MPN)	9221 E APHA 23 <sup>rd</sup> edition B, C & E	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>
			IS 1622-1981	<2 to 1600 MPN/100ml
		E.Coli (MPN)	9221 F APHA 23 <sup>rd</sup> edition B,C & G2	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>
<b>2.</b>	<b>Drinking water</b>	Estimation of Total Coliform (MPN)	IS 1622-1981	<2 to 1600 MPN/100ml
		Estimation of Fecal coliform (MPN)	IS 1622-1981	<2 to 1600 MPN/100ml
		E.coli	IS 1622-1981	Present/absent per 100ml

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II.	<b>ENVIRONMENT AND POLLUTION</b>			
1.	<b>Effluent / waste water</b>	Estimation of Total Coliform (MPN)	9221 B APHA 23 <sup>rd</sup> edition B&C	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>
		Estimation of Fecal coliform (MPN)	9221 E APHA 23 <sup>rd</sup> edition B,C&E	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>
		E.Coli (MPN)	9221 F APHA 23 <sup>rd</sup> edition B,C&G2	<1.8 to >1600 MPN/100ml multiplied by dilution factor. Max dilution 10 <sup>-5</sup>

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Ashok Kumar  
Convenor

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Birendra Prasad Murmu  
Program Manager

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<b><u>CHEMICAL TESTING</u></b>				
<b>I.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Ambient Air Quality Monitoring</b>	RSPM (PM <sub>10</sub> )	IS 5182 (Part - 23), 2006	05 µg/m <sup>3</sup> to 250 µg/m <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part - 2), 2001	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Oxides of Nitrogen (NO <sub>x</sub> )	IS 5182 (Part-6), 2006	5 µg/m <sup>3</sup> to 750 µg/m <sup>3</sup>
		Chlorine	IS 5182 (Part 19) 1982 RA 2003	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Hydrogen Sulphide(H <sub>2</sub> S)	IS 5182 (Part 7) 1973	6 µg/m <sup>3</sup> to 600 µg/m <sup>3</sup>
		Carbon Disulphide (CS <sub>2</sub> )	IS 5182 (Part 20) 1982	10 µg/m <sup>3</sup> to 21000 µg /m <sup>3</sup>
<b>2</b>	<b>Stack Emissions</b>	(Particulate Matter)	IS 11255 (Part-1), 1985 (RA 1999)	10 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen (NO <sub>x</sub> )	IS 11255(Part-7), 2005	5 mg/Nm <sup>3</sup> to 200 mg/Nm <sup>3</sup>
		Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (Part-2), 1985 (RA 2003)	5 mg/Nm <sup>3</sup> to 200 mg/Nm <sup>3</sup>
		Carbon Disulphide (CS <sub>2</sub> )	IS 11255 (Part-4)-2006	5 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Hydrogen Sulphide (H <sub>2</sub> S)	IS 11255 (Part-4)-2006	2 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Ammonia	IS 11255(Part 6),1999	5 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Flue gas Velocity	IS 11255 (Part-3) 2008)	3 m/s to 60 m/s
		Flow rate	IS 11255 (Part-3) 2008)	10 Nm <sup>3</sup> /h to 50000 Nm <sup>3</sup> /h
		Temperature	IS 11255 (Part-3) 2008)	Ambient to 400°C
		<b>II.</b>	<b>WATER</b>	
<b>1.</b>	<b>Surface Water/ Ground Water/ Drinking water</b>	Colour	2120 APHA 23rd ed.	2 to 500 Co-Pt units
		Temperature °C	IS 3025 (Part-9)-1984 (RA 2017)	2 °C to 90 °C

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		Turbidity.	Nephelometric method. (2130 B APHA 23rd ed.)	1 NTU to 1000 NTU
		pH Value	Electrometric Method (4500 B APHA 23rd ed.)	1 to 12
		Conductivity	2510 B APHA 23rd ed.	1.0 mS/Cm to 100 mS/Cm
		Total Solids	Gravimetric method. (2540 B APHA 23rd ed.)	10 mg/l to 100000 mg/l
		Total Suspended Solids	Gravimetric method. (2540 D APHA 23rd ed.)	2 mg/l to 100000 mg/l
		Total Dissolved Solids	Gravimetric method. (2540 C APHA 23rd ed.)	10 mg/l to 100000 mg/l
		Volatile & Fixed residue	Gravimetric method. (2540 E APHA 23rd ed.)	2 mg/l to 100000 mg/l
		Total Hardness	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. ( 2340 C APHA 23rd ed.)	5 mg/l to 1000 mg/l
		Chloride	Argentometric method. (4500 Cl- B APHA 23rd ed.)	5 mg/l to 50000 mg/l
		Dissolved O <sub>2</sub>	Winkler method-Azide modification. (4500-O-C APHA 23rd ed.)	0.1 mg/l to 15 mg/l
		Calcium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. (3500-Ca B APHA 23rd ed.)	5 mg/l to 1000 mg/l
		Magnesium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric Calculation Method. (3500- Mg B APHA 23rd ed.)	5 mg/l to 1000 mg/l
		BOD at 27°C 3 days	IS 3025 (Part 44) 1993 RA 2014	5 mg/l to 50000 mg/l
		Oil & Grease (mineral oil)	Liquid-Liquid Partition Gravimetric method. (5520 B APHA 23rd ed.)	01 mg/l to 1000 mg/l

**Ashok Kumar**  
Convenor

**Birendra Prasad Murmu**  
Program Manager

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		Phenolic Compound	4 Amino Antipyrine method without Chloroform Extraction (Direct Photometric method) (5530 D APHA 23rd ed.	1 mg/l to 50 mg/l
		Sulphides	Iodometric Method (4500-S <sup>2</sup> - F APHA 23rd Edi.)	0.5 mg/l to 50.0 mg/l
		COD	Open Reflux Method (5220 B- APHA 23rd Edition)	5 mg/l to 50000 mg/l
		Hexavalent Chromium	Colorimetric method.(3500-Cr B APHA 23rd Edition)	0.5 mg/l to 10.0 mg/l
		Sulphate	Turbid metric method SO <sub>4</sub> E APHA 4500- 23rd Edition	2 mg/l to 25000 mg/l
		Sodium	Flame Emission Photometric Method 3500-Na B APHA 23rd ed	1 mg/l to 1000 mg/l
		Potassium.	Flame Emission Photometric Method 3500-K B APHA 23rd ed	2 mg/l to 1000 mg/l
		Sodium Adsorption Ratio (SAR)	IS 11624:1986 (RA 2009)	0.1 to 100
		Cyanide	Titrimetric method. (4500-CN-D APHA 23rd ed.)	0.05 mg/l to 10 mg/l
		Acidity.	Titration Method. (2310 B APHA 23rd ed.)	1 mg/l to 1000 mg/l
		Alkalinity.	Titration method. (2320 B APHA 23rd ed.)	1 mg/l to 5000 mg/l
		Fluoride	SPADNS method (4500-F-D APHA 23rd ed.)	0.10 mg/l to 40 mg/l
		Boron	Colorimetric Curcumin method. (4500-B B APHA 23rd ed.	0.1 mg/l to 10.0 mg/l
		Total Kjeldahl Nitrogen.	Titrimetric method followed by preliminary distillation step. (4500-N <sub>org</sub> -B APHA 23rd ed.)	0.5 mg/l to 1400 mg/l

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		Ammonia Nitrogen.	Titrimetric method Nesslerization method. (4500NH <sub>3</sub> B & C APHA 23rd ed.)	0.5 mg/l to 5000 mg/l
		Nitrite Nitrogen.	Colorimetric method. (4500-NO <sub>2</sub> B APHA 23rd ed.)	0.01 mg/l to 10 mg/l
		Phosphate	Stannous Chloride method. (4500-P D APHA 23rd ed.)	0.5 mg/l to 50 mg/l.
<b>III.</b>	<b>POLLUTION &amp; ENVIRONMENT</b>			
<b>1.</b>	<b>Waste Water (Effluents/ Sewage)</b>	Colour	2120 B APHA 23rd ed.	2 to 500 Co-Pt units
		Temperature °C	IS 3025 (Part-9)-1984 (RA 2017)	2 °C to 90 °C
		Turbidity.	Nephelometric method. (2130 B APHA 23rd ed.)	1 NTU to 1000 NTU
		pH Value	Electrometric Method (4500 B APHA 23rd ed.)	1 to 12
		Conductivity	2510 B APHA 23rd ed.	1.0 mS/cm to 100 mS/cm
		Total Solids	Gravimetric method. (2540 B APHA 23rd ed.)	10 mg/l to 100000 mg/l
		Total Suspended Solids	Gravimetric method. (2540 D APHA 23rd ed.)	2 to 100000 mg/l
		Total Dissolved Solids	Gravimetric method. (2540 C APHA 23rd ed.)	10 mg/l to 100000 mg/l
		Volatile & Fixed residue	Gravimetric method. (2540 E APHA 23rd ed.)	2 mg/l to 100000 mg/l
		Total Hardness	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. (2340 APHA 23rd ed.)	5 mg/l to 1000 mg/l
	Chloride	Argentometric method. (4500 Cl— B APHA 23rd ed.)	5 mg/l to 50000 mg/l	
	Dissolved O <sub>2</sub>	Winkler method-Azide modification. (4500-O-C APHA 23rd ed.)	0.1 mg/l to 15 mg/l	

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		Calcium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. (3500-Ca APHA 23rd ed.)	5 mg/l to 1000 mg/l
		Magnesium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. (3500- Mg B APHA 23rd ed.)	5 mg/l to 1000 mg/l
		BOD at 27°C 3 days	IS 3025 (Part 44) 1993 RA 2014	5 mg/l to 50000 mg/l
		Oil & Grease (mineral oil)	Liquid-Liquid Partition Gravimetric method. (5520 B APHA 23rd ed.)	0.1 mg/l to 1000 mg/l
		Phenolic Compound	4 Amino Antipyrene method without Chloroform Extraction (Direct Photometric method) (5530 D APHA 23rd ed.)	1 mg/l to 50 mg/l
		Sulphides	Iodometric Method (4500-S <sup>2-</sup> - F APHA 23rd Edi.)	0.5 mg/l to 50.0 mg/l
		COD	APHA (23rd Edition)- 5220 B Open Reflux Method	5 mg/l to 50,000 mg/l
		Hexavalent Chromium	Colorimetric method. (3500-Cr B APHA 23rd Ed.)	0.5 mg/l to 10.0 mg/l
		Sulphate	Turbidimetric method (4500 SO <sub>4</sub> E APHA 23rd ed. )	2 mg/l to 25000 mg/l
		Sodium	Flame Emission Photometric Method (3500- Na B APHA 23rd ed.)	1 mg/l to 1000 mg/l
		Potassium.	Flame Emission Photometric Method ( 3500-K B APHA 23rd ed.)	2 mg/l to 1000 mg/l
		Sodium Adsorption Ratio (SAR)	IS 11624:1986 (RA 2009)	0.1 to 100
		Cyanide	Titrimetric method. (4500- CN D APHA 23rd ed.)	0.05 mg/l to 10 mg/l
		Acidity.	Titration Method. (2310 B APHA 23rd ed.)	1 mg/l to 1000 mg/l

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		Alkalinity.	Titration method. (2320 B APHA 22nd ed.	1 mg/l to 5000 mg/l
		Fluoride	SPADNS method (4500-F-D APHA 22nd ed.	0.10 mg/l to 40 mg/l
		Boron	Colorimetric Curcumin method. (4500-B APHA 22nd ed.	0.1 mg/l to 10.0 mg/l
		Total Kjeldahl Nitrogen.	Titrimetric method followed by preliminary distillation step. (4500-N <sub>org</sub> -B APHA 22nd ed.	0.5 mg/l to 1400 mg/l
		Ammonia Nitrogen.	Titrimetric method Nesslerization method. (4500 NH <sub>3</sub> B & C APHA 22nd ed.	0.5 mg/l to 5000 mg/l
		Nitrite Nitrogen.	Spectrophotometric method. (4500-NO <sub>2</sub> B APHA 22 <sup>nd</sup> ed.	0.01 mg/l to 10 mg/l
		Phosphate	Stannous Chloride method. (4500-P D APHA 22nd ed.	0.5 mg/l to 50 mg/l
<b>B.</b>	<b>Leachate From Haz/Solid waste In water Medium</b>	pH	4500 B APHA 23rd ed.	1 pH to 12 pH Unit
		Color	2120 B APHA 23rd ed.	2 to 500 Co-Pt units
		Acidity	Titration Method. (2310 APHA 23rd ed.	1 mg/l to 1000 mg/l 0.01 g/kg to 10 g/kg
		Alkalinity	Titration method. (2320 B APHA 23rd ed.	1 mg/l to 5000 mg/l 0.01 g/kg to 50 g/kg
		Total Dissolved Solids.	Gravimetric method. (2540 C APHA 23rd ed.	10 mg/l to 100000 mg/l 0.1 g/kg to 1000 g/kg
		Chloride.	Argentometric method. (4500 Cl-B APHA 23rd ed.	5 mg/l to 50000 mg/l 0.05 g/kg to 500 g/kg
		Sulphate.	APHA 23rd ed 4500 SO <sub>4</sub> E Turbidimetric method.	2 mg/l to 25000 mg/l 0.02 g/kg to 250 g/kg
		Total Hardness.	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method(2340 C APHA 23rd ed.	5 mg/l to 1000 mg/l 0.05 g/kg to 10 g/kg



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		Sodium	Flame Emission Photometric Method (3500- Na B APHA 23rd ed.)	1 mg/l to 1000 mg/l 0.01 to 10 g/kg
		Potassium.	Flame Emission Photometric Method (3500-K B APHA 23rd ed.)	2 mg/l to 1000 mg/l 0.02 to 10 g/kg
		Calcium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. (3500-Ca B APHA 23rd ed.	5 mg/l to 1000 mg/l 0.05 to 10 g/kg
		Magnesium	Ethylene Diamine Tetra Acetic Acid (EDTA) Titrimetric method. ( 3500-Mg B APHA 23rd ed.	5 mg/l to 1000 mg/l 0.05 g/kg to 10 g/kg
		Sodium Adsorption Ratio (SAR)	IS 11624:1986 (RA 2009)	0.1 to 100
		Phosphate	Stannous Chloride method. (4500 P D APHA 23rd ed.	0.5 to 50 mg/l 0.005 g/kg to 0.5 g/kg
		COD	APHA 23rd ed. 5220 B Open Reflux Method	5 to 50000 mg/l 0.05 g/kg to 500 g/kg
		BOD at 27 °C 3 days	IS 3025 (Part 44) 1993 RA 2014)	5 to 50000 mg/l 0.05 g/kg to 500 g/kg
		Fluoride	SPADNS method (4500-F-D APHA 23rd ed.	0.10 to 40 mg/l 0.001 g/kg to 0.4 g/kg
		Hexavalent Chromium	APHA (23rd Edition)-3500-Cr B: Colorimetric method	0.5 to 10.0 mg/l 0.005 g/kg to 0.100 g/kg

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<b>AT-SITE</b>				
<b>I.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Ambient Noise Level Monitoring</b>	Noise Level Leq dB (A) Ambient	IS 9989 -1981	30 dB to 100 dB(A)

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