

<b>Laboratory</b>	<b>T.R. Associates Laboratory, Survey No. 272/3, Royal Enfield Show Room Lane, S.G. Highway, Ahmedabad, Gujarat</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>14.11.2014</b>
<b>Certificate Number</b>	<b>T-3189</b>	<b>Valid Until</b>	<b>13.11.2016</b>
<b>Last Amended on</b>	<b>25.11.2015</b>	<b>Page</b>	<b>1 of 5</b>

<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
--------------	-----------------------------------	--------------------------------	--	---

**AT LABORATORY**

**I. AIR GASES & ATMOSPHERE**

<b>1. Stack Emission Monitoring</b>	Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (Part 2): 1985 (RA 2003)	5 mg/Nm <sup>3</sup> to 5000 mg/Nm <sup>3</sup>
	Oxides Of Nitrogen (NO <sub>2</sub> )	IS 11255 (Part 7): 2012 (RA 2006)	5 mg/Nm <sup>3</sup> to 400 mg/Nm <sup>3</sup>
	Particulate Matter	IS 11255 (Part 1): 1985 (RA 2003)	1 mg/Nm <sup>3</sup> to 5000 mg/Nm <sup>3</sup>
<b>2. Ambient Air Monitoring</b>	Particulate Matter (PM-10)	IS 5182 (Part 23) (RA 2006)	5 µg/Nm <sup>3</sup> to 1000 µg/Nm <sup>3</sup>
	Particulate Matter (PM-2.5)	STP No. TRA/STP/AA/02 Based on manual instrument manufactures	10 µg/Nm <sup>3</sup> to 1000 µg/Nm <sup>3</sup>
	Sulphur Dioxide (SO <sub>2</sub> )	IS 5182 (Part 2): 2001 (RA 2002)	5 µg/Nm <sup>3</sup> to 100 µg/Nm <sup>3</sup>
	Oxides Of Nitrogen NO <sub>2</sub>	IS 5182 (Part 6): 2006 (RA 2009)	5 µg/Nm <sup>3</sup> to 1050 µg/Nm <sup>3</sup>
	Ammonia	STP No. TRA/STP/AA/05 Based on method of sampling and analysis 3rd edition Method No. 401 Indo phenol Blue Method	5 µg/Nm <sup>3</sup> to 1000 µg/Nm <sup>3</sup>
	Chlorine	IS 5182 (Part 19): 1982 (RA 2003)	5 µg/Nm <sup>3</sup> to 400 µg/Nm <sup>3</sup>

**II. POLLUTION & ENVIRONMENT**

<b>1. Liquid effluents (Waste water)</b>	Temperature	IS 3025 (Part 9) (RA 2002)	0 to 100 °C
	Acidity	IS 3025 (Part 22): 1986 (RA 2003)	5 mg/L to 1000 mg/L

**Anita Rani  
Convenor**

**N. Venkateswaran  
Program Manager**

<b>Laboratory</b>	<b>T.R. Associates Laboratory, Survey No. 272/3, Royal Enfield Show Room Lane, S.G. Highway, Ahmedabad, Gujarat</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>14.11.2014</b>
<b>Certificate Number</b>	<b>T-3189</b>	<b>Valid Until</b>	<b>13.11.2016</b>
<b>Last Amended on</b>	<b>25.11.2015</b>	<b>Page</b>	<b>2 of 5</b>

<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
	<b>Liquid effluents (Waste water)</b>	Alkalinity	IS 3025 (Part 23): 1986 (RA 2006)	5 mg/L to 1000 mg/L
		Biochemical Oxygen Demand	IS 3025 (Part 44): 1993 (RA 2003)	1 mg/L to 10000 mg/L
		Chemical Oxygen Demand	APHA 22 <sup>nd</sup> Ed. 5220 B	5 mg/L to 20000 mg/L
		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2003)	0.1 mg/L to 15 mg/L
		Total Solids	IS 3025 (Part 15): 1984 (RA 2003)	5 mg/L to 10000 mg/L
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2006)	5 mg/L to 10000 mg/L
		Total Suspended Solids	IS 3025 (Part 17): 1984 (RA 1996)	5 mg/L to 10000 mg/L
		Total Hardness	APHA 22 <sup>nd</sup> Ed. 2340 - C	5 mg/L to 5000 mg/L
		Calcium Hardness	APHA 22 <sup>nd</sup> Ed. 3500 - Ca: B	5 mg/L to 5000 mg/L
		Magnesium hardness	APHA 22 <sup>nd</sup> Ed. 3500 - Mg: B	5 mg/L to 5000 mg/L
		Calcium as Ca <sup>+2</sup>	APHA 22 <sup>nd</sup> Ed. 3500 - Ca: B	2 mg/L to 500 mg/L
		Magnesium as Mg <sup>+2</sup>	APHA 22 <sup>nd</sup> Ed. 3500 - Mg: B	1 mg/L to 500 mg/L
		Oil And Grease	IS 3025 (Part 39): 1991 (RA 2009)	5 mg/L to 500 mg/L
		pH	IS 3025 (Part 11) (RA 2006)	1 to 14
		Electric Conductivity	IS 3025 (Part 14): 2013 (RA 2006)	0.1 µS to 200 mS
	Chloride as Cl <sup>-</sup>	IS 3025 (Part 32): 1988 (RA 2007)	5 mg/L to 20000 mg/L	

**Anita Rani  
Convenor**

**N. Venkateswaran  
Program Manager**

<b>Laboratory</b>	<b>T.R. Associates Laboratory, Survey No. 272/3, Royal Enfield Show Room Lane, S.G. Highway, Ahmedabad, Gujarat</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>14.11.2014</b>
<b>Certificate Number</b>	<b>T-3189</b>	<b>Valid Until</b>	<b>13.11.2016</b>
<b>Last Amended on</b>	<b>25.11.2015</b>	<b>Page</b>	<b>3 of 5</b>

<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
	<b>Liquid effluents (Waste water)</b>	Sulphate as SO <sub>4</sub> <sup>-2</sup>	APHA 22nd Ed. 4500 SO <sub>4</sub> <sup>-2</sup> E	5 mg/L to 50 mg/L >50 mg/L
		Colour	APHA 22 <sup>nd</sup> Ed. 2120 B Visual Comparison Method	5 CU to 500 CU
		Turbidity	APHA 22 <sup>nd</sup> Ed. 2130 B Visual Nephelometric Method	0.1 NTU to 1000 NTU
		Volatile and Fixed Residue	IS 3025 (Part 18): 1984 (RA 2002)	2 mg/L to 1000 mg/L
		Sulphite	APHA 22nd Ed. 4500 SO <sub>3</sub> <sup>-B</sup> Iodometric Method	2.0 mg/L to 250 mg/L
		Ammonical Nitrogen	APHA 22nd Ed. 4500 NH <sub>3</sub> C Titration Method	0.5 mg/L to 500 mg/L
		Hexa Chromium	IS 3025 (Part 52): 2003 Diphenylcarbazide Method	0.1 mg/L to 20 mg/L
		Total Chromium	IS 3025 (Part 52): 2003	0.1 mg/L to 20 mg/L
		Sodium	APHA 22nd Ed. 3500 Na B Flame Photometric Method	1 mg/L to 100 mg/L
		Potassium	APHA 22nd Ed. 3500 K B. Flame Photometric Method	2 mg/L to 100 mg/L

**Anita Rani  
Convenor**

**N. Venkateswaran  
Program Manager**

<b>Laboratory</b>	<b>T.R. Associates Laboratory, Survey No. 272/3, Royal Enfield Show Room Lane, S.G. Highway, Ahmedabad, Gujarat</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>14.11.2014</b>
<b>Certificate Number</b>	<b>T-3189</b>	<b>Valid Until</b>	<b>13.11.2016</b>
<b>Last Amended on</b>	<b>25.11.2015</b>	<b>Page</b>	<b>4 of 5</b>

<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>III. WATER</b>				
<b>1.</b>	<b>Potable &amp; Domestic water/ Bore water/ Ground Water/ Surface Water/ Saline water</b>	Temperature	IS 3025 (Part 9) (RA 2002)	0 to 100 °C
		Acidity	IS 3025 (Part 22): 1986 (RA 2003)	5 mg/L to 1000 mg/L
		Alkalinity	IS 3025 (Part 23): 1986 (RA 2006)	5 mg/L to 1000 mg/L
		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2003)	0.1 mg/L to 15 mg/L
		Total Solids	IS 3025 (Part 15): 1984 (RA 2003)	5 mg/L to 10000 mg/L
		Total Dissolved Solids	IS 3025 (Part 16): 1984 (RA 2006)	5 mg/L to 10000 mg/L
		Total Suspended Solids	IS 3025 (Part 17): 1984 (RA 1996)	5 mg/L to 10000 mg/L
		Total Hardness	APHA 22nd Ed. 2340 - C	5 mg/L to 5000 mg/L
		Calcium Hardness	APHA 22nd Ed. 3500 - Ca	5 mg/L to 5000 mg/L
		Magnesium hardness	APHA 22nd Ed 3500 - Mg: B	5 mg/L to 5000 mg/L
		Calcium as Ca <sup>+2</sup>	APHA 22nd Ed. 3500 - Ca: B	2 mg/L to 5000 mg/L
		Magnesium as Mg <sup>+2</sup>	APHA 22nd Ed. 3500 - Mg: B	1 mg/L to 5000 mg/L
		Oil And Grease	IS 3025 (Part 39): 1991 (RA 2009)	5 mg/L to 500 mg/L
		pH	IS 3025 (Part 11) (RA 2006)	1 to 14

**Laboratory** T.R. Associates Laboratory, Survey No. 272/3, Royal Enfield Show Room Lane, S.G. Highway, Ahmedabad, Gujarat  
**Accreditation Standard** ISO/IEC 17025: 2005  
**Discipline** Chemical Testing **Issue Date** 14.11.2014  
**Certificate Number** T-3189 **Valid Until** 13.11.2016  
**Last Amended on** 25.11.2015 **Page** 5 of 5

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<b><u>AT SITE</u></b>				
I.	<b>NOISE (EXCLUDING VIBRATION)</b>			
	Noise		IS 9989: 1991	30 dB(A) to 130(A)

-X-X-X-X-X-X-X-X-X-X-X-X-

---

**Anita Rani**  
**Convenor**

---

**N. Venkateswaran**  
**Program Manager**