

**Laboratory** Ultra Testing & Research Laboratory, C- 43, 1<sup>st</sup> Floor, Sector-88, Phase-2, Noida, Uttar Pradesh

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

**Certificate Number** TC-8189 (in lieu of T-3142)

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**Validity** 16.11.2018 to 15.11.2020

**Last Amended on** 14.12.2018

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.	WATER			
1.	(Ground Water/ Surface Water)	pH	IS 3025 (Part-11)-1983, RA 2012	2 to 12
		Total Hardness	IS 3025 (Part-21)- 2009	2 mg/L to 1000, mg/L
		Iron	IS 3025 (Part-53)-2003 RA 2009	0.05 mg/L to 10 mg/L
		Chloride	IS 3025 (Part32)-1988, RA 2003	2 mg/L to 1000 mg/L
		Fluoride	IS 3025 (Part-60):2008	0.1 mg/L to 5.0 mg/L
		Total Solid	IS 3025 (Part-15)1984, RA 2012	5 mg/L to 10000 mg/L
		Conductivity at 25°C	IS 3025(Part-14):2013 Conductivity meter	1 µs/cm to 10000 µs/cm
		Total Suspended Solids	IS 3025(Part-17)-RA 2012	5 mg/L to 1000 mg/L
		Sodium	IS 3025 (Part-45)-1993, RA 2003	5 mg/L to 1000 mg/L
		Potassium	IS 3025 (Part-45)-1993, RA 2003	5 mg/L to 1000 mg/L
		Nitrite (as NO <sub>2</sub> )	IS 3025 (Part-34)-1988, RA 2009	0.02 mg/L to 100 mg/L
		C.O.D.(as O <sub>2</sub> )	IS 3025 (Part-58)-2006, RA 2012	5 mg/L to 10000 mg/L
		B.O.D	IS 3025 (Part-44)-1993, RA 2009 (27°C for 3 days)	2 mg/L to 1000 mg/L
		Total Dissolved Solids (TDS)	IS 3025 (Part-16)-1984, RA 2006	5 mg/L to 10000 mg/L
	Calcium	IS 3025 (Part-40)-1991, RA 2009	2 mg/L to 1000 mg/L	

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		Magnesium	IS 3025(Part-46)-1994 RA 2009	2 mg/L to 1000 mg/L
		Sulphate	IS 3025 (Part-24)-1986, RA 2009	5 mg/L to 400 mg/ L
		Nitrate	IS 3025 (Part-34)-1988, RA 2009	0.1 mg/L to 100 mg/L
		Chromium (Hexavalent)	IS 3025 (Part-52)-2003	0.05 mg/L to 50 mg/L
		Alkalinity	IS 3025 (Part-23)-1986, RA 2009	2.0 mg/L to 1000 mg/L
		Phosphate (PO4)	IS 3025(Part-31)1988, RA 2003	0.2 mg/L to 100 mg/L
		Silica(as SiO2)	IS 3025(Part-35)1988 RA 2003	0.2 mg/L to 100 mg/L
		Cadmium(as Cd)	IS 3025 (Part -41): 1992 (RA 2009)	0.01 mg/L to 100 mg/L
		Manganese(as Mn)	IS 3025 (Part -59): 2006 (RA 2012)	0.1 mg/L to 100 mg/L
		Copper(as Cu)	IS 3025 (Part -42): 1992 (RA 2009)	0.01 mg/L to 100 mg/L
		Lead(as Pb)	IS 3025 (Part -47): 1994 (RA 2009)	0.005 mg/L to 500 mg/L
		Zinc(as Zn)	IS 3025 (Part -49): 1994 (RA 2009)	0.05 mg/L to 100.0 mg/L
		Turbidity	IS 3025 (Part -10): 1984 (RA 2012)	1 NTU to 500 NTU
		Boron (as B)	IS 3025 (Part -57): 2005 (RA 2009)	0.25 mg/L to 100 mg/L
		Phenol	IS 3025 (Part -43): 1992 (RA 2003)	0.001 mg/L to 10 mg/L
		Colour	IS 3025 (Part- 4): 1983	5 Hazen to 500 Hazen
		Arsenic (as As)	IS 3025 (Part- 37): 1988 AAS-VGA	0.010 mg/L to 50 mg/L

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II.	<b>POLLUTION &amp; ENVIRONMENT</b>			
1.	<b>Wastewater and Effluents</b>	pH	IS 3025 (Part-11)-1983, (RA 2012)	2 to 12
		Total Dissolved Solid (TDS)	IS 3025 (Part-16)-1984, (RA 2006)	5 mg/L to 10000 mg/L
		Total Suspended Solid (TSS)	IS 3025(Part-17) (RA 2012)	5 mg/L to 1000 mg/L
		Oil & Grease	IS 3025 (Part-39)-1991 (RA 2003)	5 mg/L to 100 mg/L
		Biochemical Oxygen Demand (BOD)	IS 3025 (Part-44)-1993 (RA 2009)	2 mg/L to 25000 mg/L
		Chemical Oxygen Demand (COD)	IS 3025 (Part-58)-2006 (RA 2012)	5 mg/L to 30000 mg/L
		Total Kjeldhal Nitrogen (TKN)	IS 3025 (Part -34): 1988 ( RA 2009)	1 mg/L to 100 mg/L
2.	<b>Soil</b>	pH	IS 2720 (Part -26): 1987 (RA 2011)	2.0 to 12.0
		Specific Electrical Conductivity	IS 14767:2000	100 µs/cm to 5,000 µs/cm
		Organic Matter	IS 2720 (Part -22): 1972 (RA 2010)	1.0 % to 10 %
		Moisture Content	IS 2720 (Part- 2): 1973 (RA 2010)	2.0% to 30 %
		Sodium (as Na)	UTRL/LAB/SOIL/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 (Based on M.L.Jackon)	20 mg/kg to 500 mg/kg
		Potassium(as K)	UTRL/LAB/SOIL/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 (Based on M.L.Jackon)	20 mg/kg to 500mg/kg

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		Calcium(as Ca)	UTRL/LAB/SOIL/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 (Based on M.L.Jackon)	200 mg/kg to 1000 mg/kg
		Total Soluble Sulphate	IS 2720 (Part -27):1977 (RA 2010) Turbidity Metric Method	10.0 mg/kg to 1000 mg/kg
		Total Kjeldhal Nitrogen(TKN)	UTRL/LAB/SOIL/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 (Based on M.L.Jackon)	200 mg/kg to 1000 mg/kg
<b>III.</b>	<b>ATMOSPHERIC POLLUTION</b>			
<b>1.</b>	<b>Noise</b>	Ambient Noise	IS 9989 : 1981 (RA 2008)	30 db to 134 db
		Source Noise	IS 4758 : 1968 (RA 2017)	30 db to 134 db
<b>2.</b>	<b>Ambient Air</b>	Particulate Matter (Size less than 10 µm) or PM <sub>10</sub>	IS 5182 (Part -23): 2006 (RA 2012)	10 µg/m <sup>3</sup> to 2000 µg/m <sup>3</sup>
		Particulate Matter (Size less than 2.5 µm) or PM <sub>2.5</sub>	UTRL/LAB/AIR/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 Based On CPCB Guidelines	5.0 µg/m <sup>3</sup> to 500 µg/m <sup>3</sup>
		Sulphur Dioxide (as SO <sub>2</sub> )	IS 5182 (Part -2): 2001 (RA 2012) (Improved West & Gaeke Method)	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Nitrogen oxide (as NO <sub>2</sub> )	IS 5182 (Part -6): 2006 (RA 2012) (Modified Jacob & Hochheiser Sodium Arsenite Method)	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Ozone(as O <sub>3</sub> )	IS 5182 (Part -9): 1974 ( RA 2009)	10 µg/m <sup>3</sup> to 200 µg/m <sup>3</sup>

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		Ammonia (as NH <sub>3</sub> )	UTRL/LAB/AIR/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 Based On CPCB Guidelines	20 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Lead (as Pb)	IS 5182 (Part -22): 2004 (RA 2009)	0.05 µg/m <sup>3</sup> to 5 µg/m <sup>3</sup>
		Nickel (as Ni)	UTRL/LAB/AIR/SOP/01 Issue No.: 01 Issue Date: 28-08- 2013 Based On CPCB Guidelines	0.1 µg/m <sup>3</sup> to 5 µg/m <sup>3</sup>
		Arsenic (as As)	IS 5182 (Part -22): 2004/ followed by AAS-VGA	5 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Carbon monoxide (as CO)	IS 5182(Part-10):1999 (RA 2003)	0.5 µg/m <sup>3</sup> to 10 mg/m <sup>3</sup>
		Benzene (C <sub>6</sub> H <sub>6</sub> )	IS 5182 (Part -11): 2006/ G.C –FID With Capillary column	1.8 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Benzene (α) Pyrene (BaP)- Particulate Phase Only	IS 5182 (Part- 12): 2004/ G.C –FID With Capillary column	1 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
<b>3.</b>	<b>Stack Emission</b>	Particulate Matter	IS 11255 (Part -1): 1985 (RA 2009)	10.0 mg/Nm <sup>3</sup> to 100.0 mg/Nm <sup>3</sup>
		Sulphur Dioxide	IS 11255 (Part- 2): 1985 (RA 2009)	5.0 mg/Nm <sup>3</sup> to 100.0 mg/Nm <sup>3</sup>
		Nitrogen Dioxide	IS 11255 (Part- 7): 1985 (RA 2007)	1.0 mg/Nm <sup>3</sup> to 1000.0 mg/Nm <sup>3</sup>