

Laboratory **EMTRC Lab (EMTRC Consultants Pvt. Ltd.), F-66, Road 2, Phase-I, UPSIDC Industrial Area, Masuri Gulawthi Road, Ghaziabad, Uttar Pradesh**

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

Certificate Number **TC-7376**

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Validity **09.06.2018 to 08.06.2020**

Last Amended on --

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**CHEMICAL TESTING**

<b>I. ATMOSPHERIC POLLUTION</b>				
<b>1.</b>	<b>Ambient Air / Work Zone Air</b>	Particulate Matter PM <sub>10</sub>	IS 5182 (Part 4)	5 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Particulate Matter PM <sub>2.5</sub>	SOP/13/IV Issue 2, 20-3-18	5 µg/m <sup>3</sup> to 300 µg/m <sup>3</sup>
		Sulphur dioxide as SO <sub>2</sub>	IS 5182 (Part 2)	4 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Nitrogen oxides as NO <sub>2</sub>	IS 5182 (Part 6)	6 µg/m <sup>3</sup> to 740 µg/m <sup>3</sup>
		Ozone	SOP/13/VII Issue 2, 20-3-18	19.6 µg/m <sup>3</sup> to 1960 µg/m <sup>3</sup>
		Ammonia as NH <sub>3</sub>	SOP/13/VIII Issue 2, 20-3-18	10 µg/m <sup>3</sup> to 700 µg/m <sup>3</sup>
		Benzene	IS 5182 (Part 11)	1 µg/m <sup>3</sup> to 50 µg/m <sup>3</sup>
		Benzo (a) pyrene	IS 5182 (Part 12)	1 ng/m <sup>3</sup> to 50 ng/m <sup>3</sup>
		Arsenic	SOP/13/XI Issue 2, 20-3-18	5 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Nickel	SOP/13/XI Issue 2, 20-3-18	5 ng/m <sup>3</sup> to 100 ng/m <sup>3</sup>
		Lead	SOP/13/XI Issue 2, 20-3-18	1 µg/m <sup>3</sup> to 50 µg/m <sup>3</sup>
<b>2.</b>	<b>Fugitive Emissions</b>	Suspended Particulate Matter, SPM	IS 5182 (Part 4)	5 µg/m <sup>3</sup> to 15000 µg/m <sup>3</sup>
<b>3.</b>	<b>Stack Emissions</b>	Particulate Matter	IS 11255 (Part 1)	5 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Sulphur dioxide as SO <sub>2</sub>	IS 11255 (Part 2)	5 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Nitrogen oxides as NO <sub>x</sub>	IS 11255 (Part 6 & Part 7)	5 mg/Nm <sup>3</sup> to 2000 mg/Nm <sup>3</sup>
		Carbon dioxide as CO <sub>2</sub>	IS 13270	1 % to 15 %
		Oxygen as O <sub>2</sub>	IS 13270	1 % to 15 %
		Carbon Monoxide as CO	IS 13270	1 % to 15 %
<b>4.</b>	<b>Ambient Noise, Source Noise</b>	Noise level	IS 9989	30 dB to 130 dB
<b>5.</b>	<b>Meteorological Parameters</b>	Wind Speed	SOP/17, Issue 2, 20-3-2018	0.1 km/hour to 75 km/hour
		Wind Direction	SOP/17, Issue 2 20-3-2018	0 to 359°
		Relative Humidity	SOP/17, Issue 2 20-3-2018	1 % R.H. to 99 % R.H.
		Temperature	SOP/17, Issue 2 20-3-2018	0.1 °C to 70 °C

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II.	<b>WATER</b>			
1.	<b>Surface water, Ground water &amp; Drinking water</b>	pH Value	APHA	1 to12
		Colour	APHA	1 Hazen unit to 50 Hazen unit
		Total Dissolved Solids	APHA	10 mg/L to 20000 mg/L
		Total Suspended Solids	APHA	1 mg/L to 100 mg/L
		Temperature	APHA	1 °C to 70 °C
		Turbidity	APHA	2 NTU to 40 NTU
		Conductivity	APHA	1 µS/cm to 40000 µS/cm
		Dissolved Oxygen	APHA	0.5 mg/L to 12 mg/L
		BOD	IS 3025 (Part 44)	1 mg/L to 30 mg/L
		COD	APHA	5 mg/L to 300 mg/L
		Hardness	APHA	2 mg/L to 400 mg/L
		Calcium	APHA	2 mg/L to 160 mg/L
		Magnesium	APHA	2 mg/L to 100 mg/L
		Acidity	APHA	2 mg/L to 400 mg/L
		Alkalinity	APHA	2 mg/L to 400 mg/L
		Nitrogen Ammonia	APHA	1 mg/L to 500 mg/L
		Nitrogen (Organic)	APHA	0.5 mg/L to 100 mg/L
		Nitrogen (Nitrate)	SOP/10/VIII Issue 2, 20-3-2018	0.5 mg/L to 100 mg/L
		Phosphorus as PO <sub>4</sub>	APHA	0.1 mg/L to 100 mg/L
		Sulphate as SO <sub>4</sub>	APHA	2 mg/L to 400 mg/L
		Chloride as Cl	APHA	2 mg/L to 400 mg/L
		Fluoride as F	APHA	0.1 mg/L to 50 mg/L
		Silica as SiO <sub>2</sub>	APHA	1.0 mg/L to 50 mg/L
		Sodium	APHA	1 mg/L to 1000 mg/L
		Potassium	APHA	1 mg/L to 100 mg/L
		Phenols	APHA	0.1 mg/L to 100 mg/L
		Residual Chlorine	APHA	0.1 mg/L to 100 mg/L

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III.	<b>RESIDUES IN WATER</b>			
1.	<b>Residues in Water</b>	Trace Metal		
		Copper	APHA	0.05 mg/L to 10 mg/L
		Iron	APHA	0.3 mg/L to 15 mg/L
		Lead	APHA	0.5 mg/L to 30 mg/L
		Zinc	APHA	0.1 mg/L to 20 mg/L
		Cadmium	APHA	0.1 mg/L to 3 mg/L
		Manganese	APHA	0.1 mg/L to 5 mg/L
		Mercury	APHA	0.025 mg/L to 5 mg/L
		Chromium (Total)	APHA	0.6 mg/L to 15 mg/L
		Chromium (VI)	APHA	1 mg/L to 15 mg/L
		Nickel	APHA	0.1 mg/L to 20 mg/L
		Boron	APHA	0.1 mg/L to 5 mg/L
IV.	<b>POLLUTION &amp; ENVIRONMENT</b>			
1.	<b>Waste Water (Effluents) (Sewage)</b>	pH Value	APHA	1 to 12
		Total Dissolved Solids	APHA	10 mg/L to 20000 mg/L
		Total Suspended Solids	APHA	1 mg/L to 1000 mg/L
		Temperature	APHA	1°C to 100 °C
		Turbidity	APHA	2 NTU to 100 NTU
		Conductivity	APHA	1 µS/cm to 40000 µS/cm
		Dissolved Oxygen	APHA	0.5 mg/L to 12 mg/L
		BOD	IS 3025 (Part 44)	1 mg/L to 50000 mg/L
		COD	APHA	5 mg/L to 50000 mg/L
		Oil & Grease	APHA	1 mg/L to 100 mg/L
		Hardness	APHA	2 mg/L to 400 mg/L
		Nitrogen Ammonia	APHA	1 mg/l to 100 mg/L
		Nitrogen (Organic)	APHA	0.5 mg/L to 100 mg/L
		Nitrogen (Nitrate)	SOP/10/VIII Issue 2, 20-3-2018	0.1 mg/L to 100 mg/L

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Convenor

N. Venkateswaran  
Program Director

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		Phosphorus as PO <sub>4</sub>	APHA	0.1 mg/L to 10 mg/L
		Fluoride as F	APHA	0.1 mg/L to 100 mg/L
		Sodium	APHA	1 mg/L to 1000 mg/L
		Potassium	APHA	1 mg/L to 1000 mg/L
		Phenols	APHA	0.1 mg/L to 1000 mg/L
		Residual Chlorine	APHA	0.1 mg/L to 1000 mg/L
		Effluent Toxicity (Bioassay only qualitative-90% survival of fish after 96 hours in 100% effluent)	IS 6582	Nil to 100 % survival
<b>2.</b>	<b>Soil/ Sediments</b>	pH	IS 2720 (Part 26)	1 to 12
		Conductivity	IS 14767	1 µS/cm to 20000 µS/cm
		Moisture Content	IS 2720 (Part 18)	1 % to 50 %
		Available Sodium	SOP/15/05, Issue 2, 20-3-2018	10 mg/kg to 1000 mg/kg
		Available Potassium	SOP/15/06, Issue 2, 20-3-2018	10 mg/kg to 2500 mg/kg
		Available Phosphorous	SOP/15/07, Issue 2, 20-3-2018	3 mg/kg to 500 mg/kg
		Available Nitrogen	IS 14684	5.6 mg/kg to 560 mg/kg
		Organic Matter	IS 2720 (Part 22)	0.09 % to 4.3 %
		Lead	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Nickel	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Copper	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Manganese	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Zinc	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg

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		Iron	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Calcium	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Magnesium	SOP/15/13, Issue 2, 20-3-2018	2 mg/kg to 200 mg/kg
		Water Holding Capacity	SOP/15/13, Issue 2, 20-3-2018	20 % to 70 %
		Cation Exchange Capacity	SOP/15/13, Issue 2, 20-3-2018	10 meq/100g to 100 meq/100g