

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 1 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

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.	POLLUTION & ENVIRONMENT			
1.	Waste Water	Color	IS 3025 (Part 4) 1983 (RA 2002) 2120 B APHA (22 nd Edition) 2012	2 Hazen to 100 Hazen
		Odor	IS 3025 (Part 5) 1983 (RA 2002)	Qualitative
		Suspended Solids	IS 3025 (Part 17) 1984 (RA 1996)	5 mg/l to 1000 mg/l
		Particle Size of suspended Solid (850 Micron)	IS 6339:1971 (RA 2001)	Qualitative
		pH at 25°C	IS 3025 (Part 11) 1983 (RA 2002) 4500-H+B APHA (22 nd Edition) 2012	2 to 12
		Electrical Conductivity 25°C	IS 3025 (Part 14) 1984 (RA 2002) 2510 B APHA 22 nd Edition 2012	2 µmhos/cm to 50000 µmhos/cm
		Total Dissolved Solids (TDS)	IS 3025 (Part 16) 1984 (RA 2006) 2540 C APHA (22 nd Edition) 2012	5 mg/l to 10000 mg/l
		Temperature	IS 3025 (Part 9) 1984 (RA 2002) 2550 B APHA (22 nd Edition) 2012	15°C to 50°C
		Oil & Grease	IS 3025 (Part 39) 1991 (RA 2003) 5520-B APHA (22 nd Edition) 2012	2 mg/l to 1000 mg/l

Laboratory Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6741

Page 2 of 20

Validity 12.01.2018 to 11.01.2020

Last Amended on --

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		Total Residual chlorine as Cl ⁻	IS 3025 (Part 26) 1986 (RA 2003) 4500 Cl ⁻ B APHA (22 nd Edition) 2012	0.2 mg/l to 100 mg/l
		Ammonical Nitrogen as NH ₃ N	IS 3025 (Part 34)-1988 (RA 2003) 4500NH ₃ -C APHA (22 nd Edition) 2012	1 mg/l to 1000 mg/l
		Total Kjeldal Nitrogen as N	IS 3025 (Part 34) 1988 (RA 2003)	1 mg/l to 2000 mg/l
		Free Ammonia as NH ₃	IS 3025 (Part 34) 1988 (RA 2003)	0.1 mg/l to 500 mg/l
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58) (2006) 5220-B APHA (22 nd Edition) 2012	4 mg/l to 50000 mg/l
		Biochemical oxygen demand 3days @ 27°C (BOD)	IS 3025 (Part 44) 1993 (RA 2003)	2 mg/l to 20000 mg/l
		Borates as B	Annex H of IS 13428 4500-B B, APHA (22 nd Edition) 2012	0.1 mg/l to 10 mg/l
		Residual Sodium Carbonate (RSC)	IS 11624-1986 (RA 2001)	1 meq/l to 100 meq/l
		Percent Sodium %	CEC-SOP-WATER-47, Issue No-01, Dated-15-06-2011	1% to 100%
		Chloride as Cl ⁻	IS 3025 (Part 32) 1988 (RA 2003) 4500 Cl ⁻ B APHA (22 nd Edition) 2012	1.0 mg/l to 10000 mg/l
		Fluoride as F ⁻	IS 3025 (Part 60) 2008 4500 F-D APHA (22 nd Edition) 2012	0.1 mg/l to 10 mg/l
		Sulphates as SO ₄ ²⁻	IS 3025 (Part 24) 1986 (RA 2003)	5 mg/l to 10000 mg/l

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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Certificate Number **TC-6741**

Page 3 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

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			4500 SO ₄ ²⁻ E APHA (22 nd Edition) 2012	
		Sulphide as S	IS 3025 P-29 1986 (RA 2003) 4500 S ²⁻ F APHA (22 nd Edition) 2012	0.1 mg/l to 100 mg/l
		Dissolved Phosphorus as P	IS 3025 (Part 31) 1988 (RA 2003) 4500-P B APHA (22 nd Edition) 2012	0.1 mg/l to 5 mg/l
		Total Phosphorus as P	IS 3025 (Part 31) 1988 (RA 2003) 4500-P B APHA (22 nd Edition) 2012	0.05 mg/l to 50 0 mg/l
		Manganese as Mn	IS 3025 (Part 59)-2006 3500 Mn-B APHA (22 nd Edition) 2012 3111 B APHA 22 nd Edition 2012	0.05 mg/l to 5.0 mg/l
		Nitrate Nitrogen as NO ₃ -N	IS 3025 (Part 34) 1988 (RA 2003) 4500 NO ₃ -B APHA (22 nd Edition) 2012	0.5 mg/l to 200 mg/l
		Total Acidity as CaCO ₃	IS 3025 (Part 22) 1986 RA-2003.	1 mg/l to 10000 mg/l
		Cyanide	4500-CN-E APHA (21 st Edition) 2005 (by UV)	0.05 mg/l to 30 mg/l
		Arsenic as As	IS 3025 (Part 37) 1988 (RA 2003) 3114 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Lead as Pb	3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 10 mg/l
		Mercury as Hg	IS 3025 (Part 48) 1994 (RA 2003)	0.01 mg/l to 5 mg/l

Vivek Varadhan
Convenor

N. Venkateswaran
Program Director

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Certificate Number **TC-6741**

Page 4 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			3112 B APHA (22 nd Edition) 2012	
		Cadmium as Cd	IS 3025 (Part 41) 1992 (RA 2009) 3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Total Chromium as Cr	IS 3025 (Part 52) 2003	0.05 mg/l to 5.0 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 (Part 52) 2003 by UV 3500 Cr-B APHA (22 nd Edition) 2012	0.05 mg/l to 50 mg/l
		Selenium as Se	IS 3025 (Part 56) (RA 2003) 3114 BAPHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		copper as cu	3111B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Zinc as Zn	IS 3025 (Part 49) 1994 (RA 2003) 3111B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Nickel as Ni	3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 10 mg/l
		Iron as Fe	IS 3025 (Part 53) (RA 2003)	0.01 mg/l to 20 mg/l
			3500 Fe B APHA (22 nd Edition) 2012 3111 B APHA (22 nd Edition) 2012 by UV	0.01 mg/l to 20 mg/l
2.	Solid Waste	pH @ 25°C	IS 10158-1982 (RA 2003)	1 to 14
		Moisture content	IS 9235-1979	1.0% to 100%
		Total Kjeldhal Nitrogen as N	IS 10158-1982 (RA 2003)	10 mg/kg to 50000 mg/kg
		Phosphorus as P	IS 10158-1982 (RA 2003)	0.05 mg/kg to 5000 mg/kg

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 5 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
ii.	SOIL & ROCK			
1.	Soil	pH @ 25°C	IS 2720, (Part 26),1987, (RA 2002)	2 to 12
		Dry Matter	IS 15106:2002	50% to 100%
		Water Content	IS 15106:2002	1% to 50%
		Specific Electrical Conductivity	IS 14767:2000	1 µmhos/cm to 1000 µmhos/cm
		Total Soluble Sulphate as SO ₄	IS 2720,(Part 27) Turbidity Method	0.02% to 10%
		Calcium Carbonates	IS 2720, (Part 23)-1976 (RA 2006)	0.005% to 30%
		Soluble Solids	IS 2720, (Part 21)-1977 (RA 2006)	0.01% to 5%
		Organic matter	IS 2720, (Part 22)-1972, (RA 2001)	0.1% to 10%
		Nitrogen and Nitrogenous compounds	IS 14684:1999 (RA 2005)	2 mg/kg to 5000 mg/kg
		Oil and grease	APHA (22 nd Edition 2012)-5520-E (Extraction Method)	1 mg/kg to 1000 mg/kg
		Texture •Clay •Sand •Slit	USEPA Soil Screening Guidance: User's Guide Soil sci.soc.AM.J., Vol.65, May-June 2001	1% to 100% 1% to 100% 1% to 100%
		Sodium as Na	USEPA 3050 B	5 mg/kg to 5000 mg/kg
		Potassium as K	USEPA 3050 B	5 mg/kg to 5000 mg/kg
		Phosphorus as P	IS 10158-1982 (RA 2003) Calorimetric Method	0.05 mg/kg to 5000 mg/kg

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

Certificate Number **TC-6741**

Page 6 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

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iii.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Total Suspended Particulate Matter	IS 5182:P-04:2005, (RA 2014)	10 µg/m ³ to 1000 µg/m ³
		Particulate Matter less than 10 micron size (PM10)	IS 5182:P-23:2006, (RA 2017)	5 µg/m ³ to 1000 µg/m ³
		Particulate Matter less than 2.5 micron size (PM2.5.)	CEC-SOP-AIR-03 Issue No-01 Dated-02/10/2009 In-house method based on CPCB Manual, Vol-1, 2011-2012	15 µg/m ³ to 200 µg/m ³
		Sulphur Dioxide (as SO ₂)	IS 5182:P-02:2001, (RA 2017)	3 µg/m ³ to 100 µg/m ³
		Nitrogen dioxide (as NO ₂)	IS 5182:P-06:2006, (RA 2017)	3 µg/m ³ to 100 µg/m ³
		Carbon Monoxide (as CO)	CEC-SOP-AIR-06 Issue No-01 Dated-02/10/2009 In-house method based on Gas Analyzer Manual	1.1 mg/m ³ to 100 mg/m ³
		Ammonia (as NH ₃)	AWMA-Method 401	10 µg/m ³ to 400 µg/m ³
		Ozone (as O ₃)	IS 5182: (Part 9):1999 (AWMA-Method 417)	10 µg/m ³ to 200 µg/m ³
		Lead as Pb	IS 5182- (Part 22):2004, (RA 2014)	0.01 µg/m ³ to 10 µg/m ³
		Arsenic as As	AWMA-Method 302	1 ng/m ³ to 30 ng/m ³
		Nickel as Ni	USEPA IO3.2	3 ng/m ³ to 50 ng/m ³
		Mercury as Hg	AWMA-Method 317	0.5 ng/m ³ to 30 ng/m ³
		Benzene	IS 5182 (Part 11):2006, (RA 2017)	1 µg/m ³ to 50 µg/m ³
		Benzo(a) pyrene	IS 5182 (Part 12)2004, (RA 2009)	0.8 ng/m ³ to 50 ng/m ³
2.	Work Environment and Indoor Air Quality	Total Suspended Particulate Matter	NIOSH-500	20 µg/m ³ to 15000 µg/m ³
		Particulate Matter less than 10 micron size (PM10)	NIOSH-600	20 µg/m ³ to 8000 µg/m ³

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

Certificate Number **TC-6741**

Page 7 of 20

Validity **12.01.2018 to 11.01.2020**

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		Sulphur Dioxide	IS 5182:P-02:2001, (RA 2012)	3 µg/m ³ to 1000 µg/m ³
		Nitrogen dioxide (as NO ₂)	IS 5182 (Part 06):2006, (RA 2012) & NIOSH 6014	3 µg/m ³ to 10000 µg/m ³
		Carbon Monoxide (as CO)	CĒC-SOP-IAQ-07-Issue No-01 Dated-14.04.2015 In-house method based on Gas Analyzer Manual	1.1 mg/m ³ to 100 mg/m ³
		Ammonia (as NH ₃)	AWMA-Method 401	10 µg/m ³ to 30000 µg/m ³
		Lead as Pb	(NIOSH-7082)	0.001 µg/m ³ to 150 µg/m ³
		Arsenic as As	USEPA IO3.2	0.001 µg/m ³ to 300 µg/m ³
		Nickel as Ni	USEPA IO3.2	0.003 µg/m ³ to 500 µg/m ³
		Silica	NIOSH 7601	0.05 mg/m ³ to 2.5 mg/m ³
3.	Volatile Organic Compounds	Toluene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Trans-1,3-Dichloropropene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,2-Trichloroethene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,3 Dichloropropene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Di bromochloromethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dibromo ethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Chlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Ethyl benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,1,2-Trichloroethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		m-Xylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		p-xylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		o-Xylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Strene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Bromofom	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Isopropylbenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,2,2-Tetrachloroethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2,3-Trichloropropane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Bromobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		n-Propylbenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		2-Chlorotoluene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,3,5-Trimethylbenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³

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

Certificate Number **TC-6741**

Page 8 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

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		4-Chlorotoluene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Tert-Butyl benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2,4-Trimethyl benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Butyl benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		p-Isopropyltoluene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,3-Di chlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,4-Di chlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		n-Butyl benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dichlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dibromo-3-chloropropane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2,4-Trichlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Hexachlorobutadiene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Naphthalene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2,3-Trichlorobenzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Benzene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Methylene Chloride	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Trichloro ethylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Di chloro propane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Bromodichloromethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Dibromomethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Cis-1,3-Dichloropropene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Chloroform	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Bromochloromethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1,1-Trichloroethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1-Dichloro propene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Carbon Tetra chloride	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,2-Dichloroethane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		1,1-DiChloroethylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Trans 1,2 Di chloroethylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		2,2-Di chloro propane	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³
		Cis-1,2 Dichloroethylene	EPA TO-17/ ASTM-D-3687	1.00 µg/m ³ to 500 µg/m ³

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Certificate Number **TC-6741**

Page 9 of 20

Validity **12.01.2018 to 11.01.2020**

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4.	Stack Emission	Particulate Matter	IS 11255 (Part 1): (RA 2014)	15 mg/Nm ³ to 500 mg/Nm ³
		Oxygen (as O ₂)	IS 13270:2003 / OCP No:CEC-OCP-10-Inhouse method based on Flue gas analyser manual	1% to 25%
		Carbon Dioxide (as CO ₂)	IS 13270:2003 / OCP No:CEC-OCP-10-Inhouse method based on Flue gas analyser manual	1% to 20%
		Carbon Monoxide (as CO)	IS 13270:2003 / OCP No:CEC-OCP-10-Inhouse method based on Flue gas analyser manual	1% to 10%
		Sulphur Dioxide (as SO ₂)	IS 11255 P-2:2003 / OCP No:CEC-OCP-10-Inhouse method based on Flue gas analyser manual	4 mg/Nm ³ to 400 mg/Nm ³
		Oxides of Nitrogen (as NO _x)	IS 11255 P-7:2005 / OCP No:CEC-OCP-10-Inhouse method based on Flue gas analyser manual	4 mg/Nm ³ to 1000 mg/Nm ³
		Ammonia	IS 11255: (Part 6):1999, (RA 2014)	10 mg/m ³ to 80 mg/m ³
5.	Ambient Noise Level	Sound Pressure Level	CEC-OCP-11-CPCB Method & Inhouse method based on Instrument manual Issue No-01 Dated:04/11/2009	30 dB(A) to 130 dB(A)
6.	Meteorological Parameter	Illumination	Inhouse method based on instrument manual, CEC-OCP-14, Issue No-01 Dated:04/11/2009	30 Lux to 400000 Lux

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Certificate Number

TC-6741

Page 10 of 20

Validity

12.01.2018 to 11.01.2020

Last Amended on --

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IV.	WATER			
1.	Water	Color	IS 3025 (Part 4) 1983 (RA 2002) 2120 B APHA (22 nd Edition) 2012	2 Hazen to 100Hazen
		Odour	IS 3025 (Part 5) 1983 (RA 2002)	Qualitative
		Taste	IS 3025 (Part 7) 1984 (RA 2002)	Qualitative
		Turbidity	IS 3025 (Part 10) 1984 (RA 2002) 2130 B APHA (22 nd Edition) 2012	1 NTU to 400 NTU
		pH at 25°C	IS 3025 (Part 11) 1983 (RA 2002) 4500-H ⁺ B APHA (22 nd Edition) 2012	2 to 12
		Total Dissolved Solids (TDS)	IS 3025 (Part 16) 1984 (RA 2006) 2540 C APHA (22 nd Edition) 2012	2 mg/l to 10000 mg/l
		Electrical Conductivity	IS 3025 (Part 14) 1984 (RA 2002) 2510 B APHA (22 nd Edition) 2012	2 µmhos/cm to 20000 µmhos/cm
		Total suspended solids	IS 3025 (Part 17) 1984 (RA 1996) 2540-D APHA (22 nd Edition) 2012	2 mg/l to 300 mg/l
		Sulphates as SO ₄ ²⁻	IS 3025 (Part 24) 1986 (RA 2003) 4500 SO ₄ ²⁻ E APHA (22 nd Edition) 2012	5 mg/l to 2000 mg/l

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Page 11 of 20

Validity **12.01.2018 to 11.01.2020**

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		Sulphide as S	IS 3025 (Part 29) 1986 (RA 2003) 4500 S ² -F APHA (22 nd Edition) 2012	0.05 mg/l to 50 mg/l
		Total hardness as CaCO ₃	IS 3025 (Part 21)-1983 (RA 2002) 2340 C APHA (22 nd Edition) 2012	1 mg/l to 5000 mg/l
		Calcium hardness as CaCO ₃	3500 Ca B APHA (22 nd Edition) 2012	1 mg/l to 3000 mg/l
		Magnesium hardness as CaCO ₃	3500 Mg B APHA (22 nd Edition) 2012	1 mg/l to 3000 mg/l
		Magnesium as Mg	IS 3025 (Part 46) 1994 (RA 2003) 3500 Mg B APHA (22 nd Edition) 2012	1 mg/l to 720 mg/l
		Calcium as Ca	IS 3025 (Part 40) 1991 (RA 2003)	1 mg/l to 1200 mg/l
		Chloride as Cl ⁻	IS 3025 (Part 32) 1988 (RA 2003) 4500 Cl ⁻ B APHA (22 nd Edition) 2012	0.5 mg/l to 2000 mg/l
		P.Alkalinity as CaCO ₃	IS 3025 (Part 23) 1986 (RA 2003) 2320 B APHA (22 nd Edition) 2012	1.0 mg/l to 100 mg/l
		Total alkalinity as CaCO ₃	IS 3025 (Part 23) 1986 (RA 2003) 2320 B APHA (22 nd Edition) 2012	1.0 mg/l to 1000 mg/l
		Nitrite nitrogen as NO ₂ -N	IS 3025 (Part 34) 1988 (RA 2003)	0.01 mg/l to 100 mg/l

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Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6741

Page 12 of 20

Validity 12.01.2018 to 11.01.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Nitrate nitrogen as NO ₃ -N	IS 3025 (Part 34) 1988 (RA 2003) 4500 NO ₃ -B APHA (22 nd Edition) 2012	1 mg/l to 100 mg/l
		Fluoride as F ⁻	IS 3025 (Part 60) 2008 4500 F-D APHA (22 nd Edition) 2012	0.1 mg/l to 50 mg/l
		Free Residual chlorine as Cl ⁻	IS 3025 (Part 26) 1986 (RA 2003) 4500 Cl-B APHA (22 nd Edition) 2012	0.2 mg/l to 20 mg/l
		Phenolic Compounds as C ₆ H ₅ OH	IS 3025 (Part 43) 1992 (RA 2003) 5530 D APHA (22 nd Edition) 2012	0.1 mg/l to 1 mg/l
		Anionic surface active agent as MBAS	Annex K of IS 13428 (2005) 5540 C, APHA (22 nd Edition) 2012	0.1 mg/l to 5 mg/l
		Reactive Silica as SiO ₂	IS 3025 (Part 35) 1988 (RA 2003) 4500-SiO ₂ -C, D APHA (22 nd Edition) 2012	0.02 mg/l to 100 mg/l
		Borates as B	Annex H of IS 13428-2005 4500-B B, APHA (22 nd Edition) 2012	0.1 mg/l to 10 mg/l
		Cyanide as CN	4500-CN-E-APHA (22 nd Edition) 2012	0.05 mg/l to 30 mg/l
		Total Chromium as Cr	IS 3025 (Part 52) 2003 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.05 mg/l to 20 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 (P-52) 2003 3500 Cr-B APHA (22 nd Edition) 2012	0.05 mg/l to 50 mg/l

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 13 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Organic Solids	IS 3025 (Part 18) 1984 (RA 2002)	2 mg/l to 10000 mg/l
		Inorganic Solids	IS 3025 (Part 18) 1984 (RA 2002)	2 mg/l to 10000 mg/l
		To neutralize 100 ml sample of water using phenolphthalein as an indicator with 0.02N NaOH	IS 3025 (Part 22) 1986 (RA 2003)	1 ml to 50 ml
		To neutralize 100 ml sample of water using mixed indicator with 0.02N H ₂ SO ₄	IS 3025 (Part 23) 1986 (RA 2003)	1 ml to 100 ml
		Oxygen absorbed in 4hrs	IS 3025 (Part 63):2007	0.1 mg/l to 100 mg/l
		Total Solids (TS)	IS 3025 (Part 15) 1984 (RA 2003) 2540 BAPHA (22 nd Edition) 2012	2 mg/l to 10000 mg/l
		Aluminium as Al	IS 3025 (P-55) (RA 2003) IS 15302-2003	0.03 mg/l to 20 mg/l
		Copper as Cu	IS-3025 (Part 42) 1992 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Manganese as Mn	IS 3025 (Part 59) 2006 3111 B APHA (22 nd Edition) 2012	0.05 mg/l to 5.0 mg/l
		Sodium as Na	IS 3025 (Part 45) 1993 (RA 2003) 3500 Na-B APHA (22 nd Edition) 2012	2 mg/l to 1000 mg/l
		Mercury as Hg	IS 3025 (Part 48) 1994 (RA 2003) 3112 B APHA (22 nd Edition) 2012	0.001 mg/l to 5 mg/l

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 14 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Nickel as Ni	3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 10 mg/l
		Zinc as Zn	IS 3025 (Part 49)1994 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Arsenic as As	IS 3025 (Part 37) 1988 (RA 2003) 3114 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Total iron as Fe	3111 B APHA (22 nd Edition) 2012(AAS)	0.01 mg/l to 20 mg/l
			3500 Fe B APHA (22 nd Edition) 2012 (UV Spectro)	0.01 mg/l to 20 mg/l
		Antimony as Sb	3111 B APHA APHA (22 nd Edition) 2012	0.005 mg/l to 5 mg/l
		Potassium as K	IS 3025 (Part 45) 1993 (RA 2003) 3500 K-B APHA (22 nd Edition) 2012	1 mg/l to 500 mg/l
		Lead as Pb	3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 10 mg/l
		Cadmium as Cd	IS 3025 (Part 41) 1992 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Silver as Ag	3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Selenium as Se	IS 3025 (Part 56) 2003 3114 B APHA (22 nd Edition) 2012	0.005 mg/l to 5 mg/l
		Barium as Ba	IS 15302-2003 3111 D APHA (22 nd Edition) 2012	0.5 mg/l to 10 mg/l

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Program Director

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 15 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Pesticide Residues	o,p DDT	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		p,p DDT	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		o,p DDE	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		p,p DDE	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		o,p DDD	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		p,p DDD	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Gamma HCH(Lindane)	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Alpha HCH	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Beta HCH	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Delta HCH	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Alpha Endosulfan	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Beta Endosulfan	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Endosulfan Sulphate	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Monocrotophos	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Ethion	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Chlorpyrifos	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Phorate	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Phorate Sulphoxide	USEPA 525.2-1995	0.03 µg/L to 100 µg/L
		Phorate Sulphone	USEPA 525.2-1995	0.02 µg/L to 100 µg/L
		Butachlor	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Isoproturon	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Alachlor	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Atrazine	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Methyl Parathion	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Methyl Paraoxon	USEPA 525.2-1995	0.05 µg/L to 100 µg/L
		Malathion	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
		Malaoxon	USEPA 525.2-1995	0.01 µg/L to 100 µg/L
Aldrin	USEPA 525.2-1995	0.01 µg/L to 100 µg/L		
Dieldrin	USEPA 525.2-1995	0.01 µg/L to 100 µg/L		
3.	Polynuclear Aromatic Hydrocarbons (PAH)	Acenaphthene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Acenaphthylene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Anthracene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Benzo (A) anthracene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Benzo (A) pyrene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L

Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 16 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Benzo (B) Fluoranthene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Benzo(G,H,I) Perylene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Chrysene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Dibenz (A,H)anthracene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Fluoranthene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Fluorene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Indeno(1,2,3-CD)Pyrene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Naphthalene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Phenanthrene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		Pyrene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2-Bromonaphthalene	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
4.	Polychlorinated Biphenyl (PCB)	2,4,4'-Trichlorobiphenyl (Aroclor-1016)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2,2',5,5'-Tetrachlorobiphenyl (Aroclor-1221)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2,2',4,5,5'-Pentachlorobiphenyl (Aroclor-1232)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2,2',3,4,4',Hexachlorobiphenyl (Aroclor-1242)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2,2',4,4',5,5'Hexachlorobiphenyl (Aroclor-1248)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
		2,2',3,4,4',5,5'Heptachlorobiphenyl (Aroclor-1254)	USEPA 525.2-1995	0.1 µg/L to 100 µg/L
5.	Sea Water	Color	IS 3025 (Part 4) 1983 (RA 2002) 2120 B APHA (22 nd Edition) 2012	2 Hazen to 100 Hazen
		Odour	IS 3025 (Part 5) 1983 (RA 2002)	Qualitative

Laboratory Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6741

Page 17 of 20

Validity 12.01.2018 to 11.01.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Turbidity	IS 3025 (Part 10) 1984 (RA 2002) 2130 B APHA (22 nd Edition) 2012	1 NTU to 400 NTU
		pH at 25 °C	IS 3025 (Part 11) 1983 (RA 2002) 4500-H+B APHA (22 nd Edition) 2012	5 to 10
		Electrical Conductivity	IS 3025 (Part 14) 1984 (RA 2002) 2510 B APHA (22 nd Edition) 2012	2 µmhos/cm to 70000 µmhos/cm
		Total Dissolved Solids (TDS)	IS 3025 (Part 16) 1984 (RA 2006) 2540 C APHA (22 nd Edition) 2012	2 mg/l to 50000 mg/l
		Total suspended solids	IS 3025 (Part 17) 1984 (RA 1996)	2 mg/l to 10000 mg/l
		Magnesium as Mg	IS 3025 (Part 46) 1994 (RA 2003) 3500 Mg B APHA (22 nd Edition) 2012	1 mg/l to 3000 mg/l
		Calcium as Ca	IS 3025 (Part 40) 1991 (RA 2003)	1 mg/l to 3000 mg/l
		Sulphates as SO ₄ ²⁻	IS 3025 (Part 24) 1986 (RA 2003) 4500 SO ₄ ²⁻ E APHA (22 nd Edition) 2012	5 mg/l to 4000 mg/l
		Chloride as Cl ⁻	IS 3025 (Part 32) 1988 (RA 2003) 4500 Cl ⁻ B APHA (22 nd Edition) 2012	10.0 mg/l to 25000 mg/l

Laboratory Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6741

Page 18 of 20

Validity 12.01.2018 to 11.01.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		P.Alkalinity as CaCO ₃	IS 3025 (Part 23) 1986 (RA 2003) 2320B APHA (22 nd Edition) 2012	1.0 mg/l to 5000 mg/l
		Total alkalinity as CaCO ₃	IS 3025 (Part 23) 1986 (RA 2003) 2320 B APHA (22 nd Edition) 2012	1.0 mg/l to 5000 mg/l
		Reactive silica	IS 3025 P-35 1988 (RA 2003) 4500-SiO ₂ -C, D APHA (22 nd Edition) 2012	0.02 mg/l to 100/ mg/l
		Free carbon dioxide as CO ₂	4500 CO ₂ -C APHA (22 nd Edition) 2012	1 mg/l to 100 mg/l
		Dissolved iron as Fe	IS 3025 (Part 53) 2003 3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 20 mg/l
		Sodium as Na	IS 3025 (Part 45) 1993 (RA 2003) 3500 Na-B APHA (22 nd Edition) 2012	2 mg/l to 50000 mg/l
		Potassium as K	IS 3025 (Part 45) 1993 3500 K-B APHA (22 nd Edition) 2012	1 mg/l to 5000 mg/l
		Oil & Grease	IS 3025 (Part 39) 1991 (RA 2003) 5520-B APHA (22 nd Edition) 2012	2 mg/l to 100 mg/l
		Sulphide as S	IS 3025 (Part 29) 1986 (RA 2009) 4500 S ² -F APHA (22 nd Edition) 2012	0.05 mg/l to 100 mg/l

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Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 19 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Anionic surface active agent as MBAS	Annex K of IS 13428 (RA 2009) 5540 C, APHA (22 nd Edition) 2012	0.1 mg/l to 5 mg/l
		Phenolic Compounds as C ₆ H ₅ OH	IS 3025 (Part 43) 1992 (RA 2003) 5530 D APHA (22 nd Edition) 2012	0.1 mg/l to 1.0 mg/l
		Borates as B	Annex H of IS 13428 4500-B B, APHA (22 nd Edition) 2012	0.3 mg/l to 10 mg/l
		Aluminium as Al	IS 3025 (Part 55) 2003 IS 15302-2003 3500 B APHA 22 nd Edition 2012	0.1 mg/l to 20 mg/l
		Arsenic as As	IS 3025 (Part 37)-1988 (RA 2003) 3114 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Barium as Ba	IS 15302-2003 3111 D APHA (22 nd Edition) 2012	0.3 mg/l to 10 mg/l
		Cadmium as Cd	IS 3025 (Part 41) 1992 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 5 mg/l
		Total Chromium as Cr	IS 3025 (Part 52) (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.05 mg/l to 50 mg/l
		Hexavalent chromium as Cr ⁶⁺	IS 3025 / P-52 (RA 2003) 3500 Cr-B APHA (22 nd Edition) 2012	0.05 mg/l to 50 mg/l

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Laboratory **Creative Engineers & Consultants, 9 B/4 Bharathwajar Street, East Tambaram, Chennai, Tamil Nadu**

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

Certificate Number **TC-6741**

Page 20 of 20

Validity **12.01.2018 to 11.01.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Copper as Cu	IS-3025 (Part 42) 1992 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Lead as Pb	IS 3025 (Part 47) 1994 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 10 mg/l
		Manganese as Mn	IS 3025 (Part 59) 2006 3111 B APHA (22 nd Edition) 2012	0.05 mg/l to 5.0 mg/l
		Silver as Ag	3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Zinc as Zn	IS 3025 (Part 49) 1994 (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Mercury as Hg	IS 3025 (Part 48) 1994 (RA 2003) 3112 B APHA (22 nd Edition) 2012	0.002 mg/l to 5 mg/l
		Selenium as Se	IS 3025 (Part 56) (RA 2003) 3114 B APHA (22 nd Edition) 2012	0.02 mg/l to 5 mg/l
		Total iron as Fe	IS 3025 (Part 53) (RA 2003) 3111 B APHA (22 nd Edition) 2012	0.01 mg/l to 20 mg/l