

Laboratory J. M. Enviro Lab Pvt. Ltd., 424, Ground Floor, Udyog Vihar, Phase-IV, Gurugram, Haryana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6821

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Validity 28.03.2018 to 27.03.2020

Last Amended on 13.04.2018

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, Swimming Pool Water and Irrigation water	pH	IS:3025 (Part-11),1983, Reaffirmed 2017/APHA (23rd edition-2017), 4500-H+ B	2.0 to 12.0
		Total Dissolved Solid	IS:3025 (Part-16),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 C	1.0 mg/l to 10000 mg/l
		Total Suspended Solid	IS:3025 (Part-17),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 D	1 mg/l to 1000 mg/l
		Specific Conductance	IS:3025 (Part-14) 2013/ APHA (23rd edition-2017), 2510 B	1 μ si/cm to 20000 μ si/cm
		Turbidity	IS:3025 (Part-10),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2130 B	1 NTU to 500 NTU
		Acidity as CaCO ₃	IS:3025 (Part-22),1986, Reaffirmed 2014/APHA (23rd edition-2017), 2310 B	1 mg/l to 500 mg/l
		Total Alkalinity as CaCO ₃	IS :3025 (Part-51),2001, Reaffirmed 2017/APHA (23rd edition-2017), 2320 B	1 mg/l to 500 mg/l
		Total Hardness as CaCO ₃	IS: 3025(Part 21),2009 Reaffirmed-2014/APHA (23rd edition-2017), 2340 C	1 mg/l to 1000 mg/l
		Calcium as Ca	IS:3025 (Part-40),1991, Reaffirmed-2014/APHA (23rd edition-2017), 3500 Ca B	0.5 mg/l to 200 mg/l

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		Magnesium as Mg	IS:3025 (Part-46),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Mg	1 mg/l to 100 mg/l
		Chloride Cl	IS: 3025 (Part-32),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500-Cl B	0.5 mg/l to 1000 mg/l
		Temperature	IS: 3025 (Part-9),1984, Reaffirmed 2012/APHA (23rd edition-2017), 2550 B	5 °C to 60 °C
		Sulphate as SO ₄	IS: 3025 (Part-24),1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500E	1 mg/l to 200 mg/l
		Residual Chlorine	IS:3025 (Part-26),1986, Reaffirmed 2014/APHA (23rd edition-2017), 2350 B	0.2 mg/l to 5.0 mg/l
		Phosphate as PO ₄	IS:3025 (Part-31),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500PD	0.02 mg/l to 25 mg/l
		Sulphite as SO ₃	IS:3025 (Part 28) 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SO ₃ -B	0.2 mg/l to 200 mg/l
		Silica as SiO ₂	IS: 3025 (Part-35),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SiO ₂ C	0.04 mg/l to 25 mg/l
		Iron as Fe	IS:3025 (Part-53) 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3111 C	0.02 mg/l to 10 mg/l
		Copper as Cu	IS: 3025 (Part 42),1992, Reaffirmed 2014/APHA (23rd edition-2017), 3111 B	0.02 mg/l to 15 mg/l

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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
		Total Chromium as Cr	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3113 B	2.0 µg/l to 50.0 µg/l
		Hexa Chromium as Cr ⁶⁺	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Cr B	0.03 mg/l to 20 mg/l
		Color	IS:3025 (Part 4),1983, Reaffirmed 2017/APHA (23rd edition-2017), 2120 B (Color Comparison Method)	5.0 Hazen Unit to 100 Hazen Unit
		Phenols	IS:3025 (Part 43),1992, Reaffirmed 2014	0.001 mg/l to 0.20 mg/l
		Ammonical Nitrogen as NH ₃	IS -3025 (Part-34),1988, Reaffirmed-2014,	1 mg/l to 100 mg/l
		Total Nitrogen as N	IS – 3025 (Part-34), 1988, reaffirmed-2014	1 mg/l to 100 mg/l
		Nitrogen Nitrate as NO ₃	IS 3025, (P-34), 1988, Reaffirmed-2014	0.05 mg/l to 50.0 mg/l
		Nitrogen Nitrite as NO ₂	IS -3025 (Part-34), 1988, reaffirmed-2014	0.05 mg/l to 20 mg/l
		Boron as B,	IS :3025 (Part 57),2005, Reaffirmed 2017/APHA (23rd edition-2017), 4500 B	0.2 mg/l to 10 mg/l
		Anionic Surfactant	APHA (23rd edition-2017), 5540 C	0.02 mg/l to 10.0 mg/l
		Fluoride as F	APHA (23rd edition-2017), 4500-F ⁻ D	0.05 mg/l to 10 mg/l
		Dissolved Oxygen	IS:3025 (Part 38),1989, Reaffirmed 2014/APHA (23rd edition-2017), 4500 O B	1.0 mg/l to 12.0 mg/l
		Sodium as Na	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Na B	0.5 mg/l to 100 mg/l

**Rozina
Convenor**

**N. Venkateswaran
Program Director**

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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
		Potassium as K	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 K B	0.1 mg/l to 50 mg/l
		Manganese	IS:3025 (Part 59),2006, Reaffirmed 2017/APHA (23rd edition-2017), 3030D, 3111 B	0.1 mg/l to 5 mg/l
		Nickel	IS :3025 (Part 54), 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	5 µg/l to 100.0 µg/l
		Zinc	IS :3025 (Part 49),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	0.5 µg/l to 50.0 µg/l
		Lead	IS :3025 (Part 47),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	8 µg/l to 200.0 µg/l
		Cadmium	IS:3025 (Part 41),1992, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	2.0 µg/l to 50.0 µg/l
		Arsenic	IS :3025 (Part 37),1988, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	2.0 µg/l to 50 µg/l
		Mercury	IS:3025 (Part 48),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	1.0 µg/l to 50 µg/l
		Cobalt	APHA (22nd edition-2012), 3030D, 3111	0.3 mg/l to 12 mg/l
		Aluminum	IS :3025 (Part 55),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Al-B,	0.03 mg/l to 5 mg/l

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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
		Barium	IS:15302,2003 Reaffirmed 2009/APHA (23rd edition-2017), 3111D	10 µg/l to 500 µg/l
		Selenium	IS:3025 (Part 56),2003, Reaffirmed 2014/APHA (22nd edition-2012), 3114C	5.0 µg/l to 50 µg/l
		Silver	IS:13428 :2005 Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3111B	0.05 mg/l to 5 mg/l
		Chloramines	APHA (23rd edition-2017), 4500 Cl G	0.01 mg/l to 10 mg/l
		Sulphide	IS :3025 (Part 29),1986, Reaffirmed 2014	0.1 mg/l to 20 mg/l
		Cyanide	IS 3025 (Part 27) 1986 Reaffirmed 2014/APHA (23rd edition-2017), 4500 CN, C and D, E	0.02 mg/l to 5.0 mg/l
		Fixed & Volatile Solids	APHA (23rd edition-2017), 2540E	2 mg/l to 250 mg/l
		Total Solids	APHA (23rd edition-2017), 2540B	2 mg/l to 250 mg/l
		Sodium Absorption Ratio (SAR)	IS 11624-1986 Reaffirmed 2001	By Calculation
2.	Surface Water, Drinking Water, Packaged Drinking water and Water from purifiers and Others	pH	IS:3025 (Part-11),1983, Reaffirmed 2017/APHA (23rd edition-2017), 4500-H+ B	2.0 to 12.0
		Total Dissolved Solid	IS:3025 (Part-16),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 C	1.0 mg/l to 10000 mg/l
		Total Suspended Solid	IS:3025 (Part-17),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 D	1 mg/l to 1000 mg/l

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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
		Specific Conductance	IS:3025 (Part-14) 2013/APHA (23rd edition-2017), 2510 B	1 μ si/cm to 20000 μ si/cm
		Turbidity	IS:3025 (Part-10), 1984, Reaffirmed 2017/APHA (23rd edition-2017), 2130 B	1 NTU to 500 NTU
		Acidity as CaCO ₃	IS:3025 (Part-22), 1986, Reaffirmed 2014/APHA (23rd edition-2017), 2310 B	1 mg/l to 500 mg/l
		Total Alkalinity as CaCO ₃	IS :3025 (Part-51), 2001, Reaffirmed 2017/APHA (23rd edition-2017), 2320 B	1 mg/l to 500 mg/l
		Total Hardness as CaCO ₃	IS: 3025(Part 21), 2009 Reaffirmed-2014/APHA (23rd edition-2017), 2340 C	1 mg/l to 1000 mg/l
		Calcium as Ca	IS:3025 (Part-40), 1991, Reaffirmed-2014/APHA (23rd edition-2017), 3500 Ca B	0.5 mg/l to 200 mg/l
		Magnesium as Mg	IS:3025 (Part-46), 1994, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Mg	1 mg/l to 100 mg/l
		Chloride Cl	IS: 3025 (Part-32), 1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500-Cl B	0.5 mg/l to 1000 mg/l
		Temperature	IS: 3025 (Part-9), 1984, Reaffirmed 2012/APHA (23rd edition-2017), 2550 B	5 °C to 60 °C
		Sulphate as SO ₄	IS: 3025 (Part-24), 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500 E	1 mg/l to 200 mg/l
		Residual Chlorine	IS:3025 (Part-26), 1986, Reaffirmed 2014/APHA (23rd edition-2017), 2350 B	0.2 mg/l to 5.0 mg/l

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		Phosphate as PO ₄	IS:3025 (Part-31),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500PD	0.02 mg/l to 25 mg/l
		Sulphite as SO ₃	IS:3025 (Part 28) 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SO ₃ ⁻ B	0.2 mg/l to 200 mg/l
		Silica as SiO ₂	IS : 3025 (Part-35),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SiO ₂ C	0.04 mg/l to 25 mg/l
		Iron as Fe	IS:3025 (Part-53) 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3111 C	0.02 mg/l to 10 mg/l
		Copper as Cu	IS: 3025 (Part 42),1992, Reaffirmed 2014/APHA (23rd edition-2017), 3111 B	0.02 mg/l to 15 mg/l
		Total Chromium as Cr	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3113 B	2.0 µg/l to 50.0 µg/l
		Hexa Chromium as Cr ⁶⁺	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Cr B	0.03 mg/l to 20 mg/l
		Color	IS:3025 (Part 4),1983, Reaffirmed 2017/APHA (23rd edition-2017), 2120 B (Color Comparison Method)	5.0 Hazen Unit to 100 Hazen Unit
		Phenols	IS:3025 (Part 43),1992, Reaffirmed 2014	0.001 mg/l to 0.20 mg/l
		Ammonical Nitrogen as NH ₃	IS -3025 (Part-34),1988, Reaffirmed-2014,	1 mg/l to 100 mg/l
		Total Nitrogen as N	IS – 3025 (Part-34), 1988, reaffirmed-2014	1 mg/l to 100 mg/l

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		Nitrogen Nitrate as NO ₃	IS 3025, (P-34), 1988, Reaffirmed-2014	0.05 mg/l to 50.0 mg/l
		Nitrogen Nitrite as NO ₂	IS -3025 (Part-34), 1988, reaffirmed-2014	0.05 mg/l to 20 mg/l
		Boron as B,	IS :3025 (Part 57),2005, Reaffirmed 2017/APHA (23rd edition-2017), 4500 B	0.2 mg/l to 10 mg/l
		Anionic Surfactant	APHA (23rd edition-2017), 5540 C	0.02 mg/l to 10.0 mg/l
		Fluoride as F	APHA (23rd edition-2017), 4500-F D	0.05 mg/l to 10 mg/l
		Dissolved Oxygen	IS:3025 (Part 38),1989, Reaffirmed 2014/APHA (23rd edition-2017), 4500 O B	1.0 mg/l to 12.0 mg/l
		Sodium as Na	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Na B	0.5 mg/l to 100 mg/l
		Potassium as K	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA ((23rd edition-2017), 3500 K B	0.1 mg/l to 50 mg/l
		Manganese	IS:3025 (Part 59),2006, Reaffirmed 2017/APHA (23rd edition-2017), 3030D, 3111 B	0.1 mg/l to 5 mg/l
		Nickel	IS :3025 (Part 54), 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	5 µg/l to 100.0 µg/l
		Zinc	IS :3025 (Part 49),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	0.5 µg/l to 50.0 µg/l

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		Lead	IS :3025 (Part 47),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	8 µg/l to 200.0 µg/l
		Cadmium	IS:3025 (Part 41),1992, RA 2014/APHA (23rd edition-2017), 3030D, 3113B	2.0 µg/l to 50.0 µg/l
		Arsenic	IS :3025 (Part 37),1988, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	2.0 µg/l to 50 µg/l
		Mercury	IS:3025 (Part 48),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	1.0 µg/l to 50 µg/l
		Cobalt	APHA (22nd edition-2012), 3030D, 3111	0.3 mg/l to 12 mg/l
		Aluminum	IS :3025 (Part 55),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Al-B	0.03 mg/l to 5 mg/l
		Barium	IS:15302,2003 Reaffirmed 2009/APHA (23rd edition-2017), 3111D	10 µg/l to 500 µg/l
		Selenium	IS:3025 (Part 56),2003, Reaffirmed 2014/APHA (22nd edition-2012), 3114C	5.0 µg/l to 50 µg/l
		Silver	IS:13428 :2005 Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3111B	0.05 mg/l to 5 mg/l
		Chloramines	APHA (23rd edition-2017), 4500 Cl G	0.01 mg/l to 10 mg/l
		Sulphide	IS :3025 (Part 29),1986, Reaffirmed 2014	0.1 mg/l to 20 mg/l
		Cyanide	IS 3025 (Part 27) 1986 Reaffirmed 2014/APHA (23rd edition-2017), 4500 CN, C and D, E	0.02 mg/l to 5.0 mg/l

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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
		Fixed & Volatile Solids	APHA (23rd edition-2017), 2540E	2 mg/l to 250 mg/l
		Total Solids	APHA (23rd edition-2017), 2540B	2 mg/l to 250 mg/l
3.	Construction Water and Industrial Water	pH	IS:3025 (Part-11),1983, RA 2017/APHA (23rd edition-2017), 4500-H+ B	2.0 to 12.0
		Total Dissolved Solid	IS:3025 (Part-16),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 C	1.0 mg/l to 10000 mg/l
		Total Suspended Solid	IS:3025 (Part-17),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 D	1 mg/l to 1000 mg/l
		Specific Conductance	IS:3025 (Part-14) 2013/APHA (23rd edition-2017), 2510 B	1 µsi/cm to 20000 µsi/cm
		Turbidity	IS:3025 (Part-10),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2130 B	1 NTU to 500 NTU
		Acidity as CaCO ₃	IS:3025 (Part-22),1986, Reaffirmed 2014/APHA (23rd edition-2017), 2310 B	1 mg/l to 500 mg/l
		Total Alkalinity as CaCO ₃	IS :3025 (Part-51),2001, Reaffirmed 2017/APHA (23rd edition-2017), 2320 B	1 mg/l to 500 mg/l
		Total Hardness as CaCO ₃	IS: 3025(Part 21),2009 Reaffirmed-2014/APHA (23rd edition-2017), 2340 C	1 mg/l to 1000 mg/l
		Calcium as Ca	IS:3025 (Part-40),1991, RA 2014/APHA (23rd edition-2017), 3500 Ca B	0.5 mg/l to 200 mg/l
		Magnesium as Mg	IS:3025 (Part-46),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Mg	1 mg/l to 100 mg/l

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		Chloride Cl	IS: 3025 (Part-32), 1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500-Cl ⁻ B	0.5 mg/l to 1000 mg/l
		Temperature	IS: 3025 (Part-9), 1984, Reaffirmed 2012/APHA (23rd edition-2017), 2550 B	5 °C to 60 °C
		Sulphate as SO ₄	IS: 3025 (Part-24), 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500E	1 mg/l to 200 mg/l
		Residual Chlorine	IS:3025 (Part-26), 1986, Reaffirmed 2014/APHA (23rd edition-2017), 2350 B	0.2 mg/l to 5.0 mg/l
		Phosphate as PO ₄	IS:3025 (Part-31), 1988, Reaffirmed 2014/APHA ((23rd edition-2017), 4500PD	0.02 mg/l to 25 mg/l
		Sulphite as SO ₃	IS:3025 (Part 28) 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SO ₃ ⁻ B	0.2 mg/l to 200 mg/l
		Silica as SiO ₂	IS : 3025 (Part-35), 1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SiO ₂ C	0.04 mg/l to 25 mg/l
		Iron as Fe	IS:3025 (Part-53) 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3111 C	0.02 mg/l to 10 mg/l
		Copper as Cu	IS: 3025 (Part 42), 1992, Reaffirmed 2014/APHA (23rd edition-2017), 3111 B	0.02 mg/l to 15 mg/l
		Total Chromium as Cr	IS:3025 (Part-52), 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3113 B	2.0 µg/l to 50.0 µg/l

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		Hexa Chromium as Cr ⁶⁺	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Cr B	0.03 mg/l to 20 mg/l
		Color	IS:3025 (Part 4),1983, Reaffirmed 2017/APHA (23rd edition-2017), 2120 B (Color Comparison Method)	5.0 Hazen Unit to 100 Hazen Unit
		Phenols	IS:3025 (Part 43),1992, Reaffirmed 2014	0.001 mg/l to 0.20 mg/l
		Ammonical Nitrogen as NH ₃	IS -3025 (Part-34),1988, Reaffirmed-2014,	1 mg/l to 100 mg/l
		Total Nitrogen as N	IS – 3025 (Part-34), 1988, reaffirmed-2014	1 mg/l to 100 mg/l
		Nitrogen Nitrate as NO ₃	IS 3025, (P-34), 1988, Reaffirmed-2014	0.05 mg/l to 50.0 mg/l
		Nitrogen Nitrite as NO ₂	IS -3025 (Part-34), 1988, reaffirmed-2014	0.05 mg/l to 20 mg/l
		Boron as B,	IS :3025 (Part 57),2005, Reaffirmed 2017/APHA (23rd edition-2017), 4500 B	0.2 mg/l to 10 mg/l
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		Fluoride as F	APHA (23rd edition-2017), 4500-F ⁻ D	0.05 mg/l to 10 mg/l
		Dissolved Oxygen	IS:3025 (Part 38),1989, Reaffirmed 2014/APHA (23rd edition-2017), 4500 O B	1.0 mg/l to 12.0 mg/l
		Sodium as Na	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Na B	0.5 mg/l to 100 mg/l

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		Manganese	IS:3025 (Part 59),2006, Reaffirmed 2017/APHA (23rd edition-2017), 3030D, 3111 B	0.1 mg/l to 5 mg/l
		Nickel	IS :3025 (Part 54), 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	5 µg/l to 100.0 µg/l
		Zinc	IS :3025 (Part 49),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	0.5 µg/l to 50.0 µg/l
		Lead	IS :3025 (Part 47),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	8 µg/l to 200.0 µg/l
		Cadmium	IS:3025 (Part 41),1992, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	2.0 µg/l to 50.0 µg/l
		Arsenic	IS :3025 (Part 37),1988, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	2.0 µg/l to 50 µg/l
		Mercury	IS:3025 (Part 48),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	1.0 µg/l to 50 µg/l
		Cobalt	APHA (22nd edition-2012), 3030D, 3111	0.3 mg/l to 12 mg/l
		Aluminum	IS :3025 (Part 55),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Al-B	0.03 mg/l to 5 mg/l

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		Barium	IS:15302,2003 Reaffirmed 2009/APHA (23rd edition-2017), 3111D	10 µg/l to 500 µg/l
		Selenium	IS:3025 (Part 56),2003, Reaffirmed 2014/APHA (22nd edition-2012), 3114C	5.0 µg/l to 50 µg/l
		Silver	IS:13428 :2005 Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3111B	0.05 mg/l to 5 mg/l
		Chloramines	APHA (23rd edition-2017), 4500 Cl G	0.01 mg/l to 10 mg/l
		Sulphide	IS :3025 (Part 29),1986, Reaffirmed 2014	0.1 mg/l to 20 mg/l
		Cyanide	IS 3025 (Part 27) 1986 Reaffirmed 2014/APHA (23rd edition-2017), 4500 CN, C and D, E	0.02 mg/l to 5.0 mg/l
		Fixed & Volatile Solids	APHA (23rd edition-2017), 2540E	2 mg/l to 250 mg/l
		Total Solids	APHA (23rd edition-2017), 2540B	2 mg/l to 250 mg/l
II.	POLLUTION AND ENVIRONMENT			
1.	Waste Water (Effluent/Sewage)	pH	IS:3025 (Part-11),1983, Reaffirmed 2017/APHA (23rd edition-2017), 4500-H+ B	1.0 to 12.0
		Total Dissolved Solid	IS:3025 (Part-16),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 C	5.0 mg/l to 10000 mg/l
		Total Suspended Solid	IS:3025 (Part-17),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2540 D	5.0 mg/l to 1000 mg/l

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		Specific Conductance	IS:3025 (Part-14) 2013 /APHA (23rd edition-2017), 2510 B	10 μ si/cm to 20000 μ si/cm
		Turbidity	IS:3025 (Part-10),1984, Reaffirmed 2017/APHA (23rd edition-2017), 2130 B	5.0 NTU to 1000 NTU
		Acidity as CaCO ₃	IS:3025 (Part-22),1986, Reaffirmed 2014/APHA (23rd edition-2017), 2310 B	1 mg/l to 500 mg/l
		Total Alkalinity as CaCO ₃	IS :3025 (Part-51),2001, Reaffirmed 2017/APHA (23rd edition-2017), 2320 B	1 mg/l to 500 mg/l
		Total Hardness as CaCO ₃	IS: 3025(Part 21),2009 Reaffirmed-2014/APHA (23rd edition-2017), 2340 C	1 mg/l to 1000 mg/l
		Calcium as Ca	IS:3025 (Part-40),1991, Reaffirmed-2014/APHA (23rd edition-2017), 3500 CaB	0.5 mg/l to 200 mg/l
		Magnesium as Mg	IS:3025 (Part-46),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Mg	1 mg/l to 100 mg/l
		Chloride Cl	IS: 3025 (Part-32),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500-Cl B	0.5 mg/l to 1000 mg/l
		Temperature	IS: 3025 (Part-9),1984, Reaffirmed 2012/APHA (23rd edition-2017), 2550 B	5 °C to 60 °C
		Sulphate as SO ₄	IS: 3025 (Part-24),1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500E	1 mg/l to 200 mg/l
		Residual Chlorine	IS:3025 (Part-26),1986, Reaffirmed 2014/APHA (23rd edition-2017), 2350 B	0.2 mg/l to 5.0 mg/l

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		Phosphate as PO ₄	IS:3025 (Part-31),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500PD	0.2 mg/l to 50 mg/l
		Sulphite as SO ₃	IS:3025 (Part 28) 1986, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SO ₃ ⁻ B	2 mg/l to 200 mg/l
		Silica as SiO ₂	IS: 3025 (Part-35),1988, Reaffirmed 2014/APHA (23rd edition-2017), 4500 SiO ₂ C	1.0 mg/l to 25 mg/l
		Iron as Fe	IS:3025 (Part-53) 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3111 C	0.02 mg/l to 50 mg/l
		Copper as Cu	IS: 3025 (Part 42),1992, Reaffirmed 2014/APHA (23rd edition-2017), 3111 B	0.02 mg/l to 15 mg/l
		Total Chromium as Cr	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3113 B	0.1 mg/l to 20 mg/l
		Hexa Valent Chromium as Cr ⁶⁺	IS:3025 (Part-52),2003, Reaffirmed 2014/APHA (22nd edition-2012), 3500 Cr B	0.03 mg/l to 20 mg/l
		Color	IS:3025 (Part 4),1983, Reaffirmed 2017/APHA (23rd edition-2017), 2120 B (Color Comparison Method)	5.0 Hazen Unit to 100 Hazen Unit
		Phenols	IS:3025 (Part 43),1992, Reaffirmed 2014	0.001 mg/l to 0.20 mg/l, 0.5 mg/l to 50 mg/l
		Ammonical Nitrogen as NH ₃	IS -3025 (Part-34),1988, Reaffirmed-2014,	1 mg/l to 100 mg/l
		Total Nitrogen as N	IS – 3025 (Part-34), 1988, reaffirmed-2014	1 mg/l to 100 mg/l

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		Nitrogen Nitrate as NO ₃	IS 3025, (P-34), 1988, Reaffirmed-2014	0.05 mg/l to 50.0 mg/l
		Nitrogen Nitrite as NO ₂	IS -3025 (Part-34), 1988, reaffirmed-2014	0.05 mg/l to 20 mg/l
		Boron as B,	IS :3025 (Part 57),2005, Reaffirmed 2017/APHA (23rd edition-2017), 4500 B	0.2 mg/l to 10 mg/l
		Anionic Surfactant	APHA (22nd edition-2012), 5540 C	0.02 mg/l to 10.0 mg/l
		Fluoride as F	APHA (23rd edition-2017), 4500-F ⁻ D	0.05 mg/l to 10 mg/l
		Dissolved Oxygen	IS:3025 (Part 38),1989, Reaffirmed 2014/APHA (23rd edition-2017), 4500 O B	1.0 mg/l to 12.0 mg/l
		Sodium as Na	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Na B	0.5 mg/l to 100 mg/l
		Potassium as K	IS:3025 (Part 45),1993, Reaffirmed 2014/APHA (23rd edition-2017), 3500 K B	0.1 mg/l to 50 mg/l
		BOD	IS 3025, (P-44) 1993, Reaffirmed-2014, /APHA (23rd edition-2017), 5210 B	1 mg/l to 50000 mg/l
		COD	IS:3025 (Part 58),2006 Reaffirmed-2017/APHA (23rd edition-2017), 5220 B	1 mg/l to 100000 mg/l
		Oil & grease	IS:3025 (Part 39),1991, Reaffirmed 2014/APHA (23rd edition-2017), 5520B	0.4 mg/l to 500 mg/l
		Manganese	IS:3025 (Part 59),1991, Reaffirmed 2017/APHA (23rd edition-2017), 3030D, 3111 B	0.1 mg/l to 5 mg/l

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		Nickel	IS :3025 (Part 54), 2003, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	0.2 mg/l to 10 mg/l
				5 µg/l to 100.0 µg/l
		Zinc	IS :3025 (Part 49),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113 B	0.1 mg/l to 10.0 mg/l
		Lead	IS :3025 (Part 47),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3113B	0.1 mg/l to 10 mg/l
				8 µg/l to 200.0 µg/l
		Cadmium	IS:3025 (Part 41),1992, RA 2014/APHA (23rd edition-2017), 3030D, 3113B	0.1 mg/l to 20 mg/l
				2.0 µg/l to 50.0 µg/l
		Arsenic	IS :3025 (Part 37),1988, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	5.0 µg/l to 50 µg/l
		Mercury	IS:3025 (Part 48),1994, Reaffirmed 2014/APHA (23rd edition-2017), 3114-C	1.0 µg/l to 50 µg/l
		Cobalt	APHA (22nd edition-2012), 3030D, 3111	0.3 mg/l to 12 mg/l
		Aluminum	IS :3025 (Part 55),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3500 Al-B,	0.03 mg/l to 5 mg/l
				5 mg/l to 200 mg/l
		Barium	IS:15302,2003 Reaffirmed 2009/APHA (23rd edition-2017), 3111D	10 µg/l to 500 µg/l

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		Selenium	IS:3025 (Part 56),2003, Reaffirmed 2014/APHA (23rd edition-2017), 3114C	5.0 µg/l to 50 µg/l
		Silver	IS:13428 :2005 Reaffirmed 2014/APHA (23rd edition-2017), 3030D, 3111B	0.1 mg/l to 5 mg/l
		Chloramines	APHA (23rd edition-2017), 4500 Cl G	0.01 mg/l to 10 mg/l
		Sulphide	IS :3025 (Part 29),1986, Reaffirmed 2014	0.1 mg/l to 20 mg/l
		Cyanide	IS 3025 (Part 27) 1986 Reaffirmed 2014/APHA (23rd edition-2017), 4500 CN , C and D, E	0.02 mg/l to 5.0 mg/l
		Settle able Solids	APHA (23rd edition-2017), 2540F	5 mg/l to 100 mg/l
		Sludge Volume Index (SVI)	APHA (23rd edition-2017), 2710D	By Calculation
2.	Soil	pH value	IS :2720 (Part – 26)1987 Reaffirmed 2011	2 to 12
		Conductivity	IS: 14767, 2000 RA 2016	0.001 mSi/cm to 200 mSi/cm
		Total kjeldahl Nitrogen	IS: 14684,1999 RA 2014	5 kg/ha. to 1000 kg/ha.
		Organic matter	IS: 2720 (Part – 22) 1972 Reaffirmed 2015	0.1 % to 30 %
		Bulk Density	USDA:1954-Reaffirmed 2010 (Page No. 121)	1 gm/cc to 1.8 gm/cc
		Available Potassium	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (14)	2 kg/ha. to 500 kg/ha.

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		Available Phosphorus	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (13)	5 kg/ha. to 100 kg/ha.
		Exchangeable Sodium	USDA:1954-Reaffirmed, 2010 Method 10A, By Flame Photometer, (Page No.96)	2 mg/kg to 500 mg/kg
		Soluble Chloride	USDA:1954-Reaffirmed, 2010 Method 13, Titration with Silver Nitrate (Page No.98)	5 mg/kg to 500 mg/kg
		Exchangeable Calcium	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (16a)	5 mg/kg to 2000 mg/kg
		Exchangeable Magnesium	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (16b)	5 mg/kg to 200 mg/kg
		Total Lead	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 200 mg/kg
		Total Cadmium	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Total Copper	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Total Zinc	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg

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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
		Total Iron	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Total Nickel	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Total Barium	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Total Chromium	USEPA 3050 B, Revision 2, December-1996	5 mg/kg to 500 mg/kg
		Sodium Absorption Ratio	USDA:1954-RA 2010	By Calculation
		Nitrite	IS: 14684, 1999 RA 2014	5 kg/hac to 1000 kg/hac
		Organic Carbon	USDA:1954-Reaffirmed, 2010 (Page-105), IS: 2720 (Part – 22) 1972 RA 2015	0.10 % to 35 %
		Total Manganese	USEPA 3050 B, Revision 2, December-1996	1.0 mg/kg to 1000 mg/kg
		Soil Moisture	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (4)	5 % to 60 %
		Mineralized Nitrogen	Method manual of Soil Testing in India, (Department of Ag., and Corporation Ministry of Ag. Govt. of India) 2011, 4.6.3 (11)	2 kg/ha. to 500 kg/ha.
III.	ORES & MINERALS			
1.	Limestone & Dolomite	Loss on Ignition	IS-1760 (Part I) :1991 Reaffirmed 2017	5 % to 50 %
		Silica as SiO ₂	IS-1760 (Part 2) :1991 Reaffirmed 2017	1 % to 50 %
		Calcium as CaO	IS-1760 Part 3) :1992 Reaffirmed 2017	5.0 % to 56 %

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		Magnesium as MgO	IS-1760 Part 3) :1992 Reaffirmed 2017	0.2 % to 25 %
		Iron as Fe ₂ O ₃	IS-1760 Part 3) :1992 Reaffirmed 2012	0.5 % to 10 %
		Aluminium as Al ₂ O ₃	IS-1760 Part 3) :1992 Reaffirmed 2012	0.5 % to 15.0 %
		Chloride as Cl	IS-1760 Part 5) :1991 Reaffirmed 2012	0.02 % to 1.0 %
IV.	SOLID FUELS			
1.	Coal	Moisture (ADB)	IS:1350 (Part-1),1984, Reaffirmed 2013	2.0 % to 25.0 %
		Volatile Matter	IS:1350 (Part-1),1984, Reaffirmed 2013	2.0 % to 40.0 %
		Ash	IS:1350 (Part-1),1984, Reaffirmed 2013	1.0 % to 60.0 %
		Total Sulphur	IS:1350 (Part-3),1969, Reaffirmed 2015	0.10 % to 15.0 %
		Gross Calorific Value (GCV)	IS:1350 (Part-2):2017	2000 Cal/gm to 8000 Cal/gm
		Fixed Carbon	IS:1350 (Part-I),1984, Reaffirmed 2013 (By Calculation)	By Calculation
2.	Coke	Moisture (ADB)	IS:1350 (Part-1),1984, Reaffirmed 2013	2.0 % to 25.0 %
		Volatile Matter	IS:1350 (Part-1),1984, Reaffirmed 2013	1.0 % to 25.0 %
		Ash	IS:1350 (Part-1),1984, Reaffirmed 2013	1.0 % to 50.0 %
		Total Sulphur	IS:1350 (Part-3),1969, Reaffirmed 2015	0.10 % to 15.0 %
		Gross Calorific Value (GCV)	IS:1350 (Part-2):2017	2000 Cal/gm to 8000 Cal/gm

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		Fixed Carbon	IS:1350 (Part-I),1984, RA 2013 (By Calculation)	By Calculation
V.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	PM _{2.5}	JMELPL/STOP/03 (Issue Date- 09.11.2017)	10 µg/m ³ to 500 µg/m ³
		PM ₁₀	IS:5182, (P-23):2006 Reaffirmed 2017	10 µg/m ³ to 1000 µg/m ³
		Sulphur Dioxide	IS: 5182, (P-2),2001 Reaffirmed 2017	5 µg/m ³ to 1050 µg/m ³
		Nitrogen Dioxide	IS: 5182, (P-6), 2006 Reaffirmed 2017	5 µg/m ³ to 750 µg/m ³
		Carbon Mono oxide	IS: 5182, (P-10), 1999 Reaffirmed 2014	0.5 mg/m ³ to 50 mg/m ³
		Methane	IS: 5182, (P-17), 1979 Reaffirmed 2009	0.5 mg/m ³ to 50 mg/m ³
		Fluoride	IS: 5182 (Part-13) 1991 Reaffirmed 2014	0.2 µg/m ³ to 50 µg/m ³
		Lead	IS: 5182(Part-22) 2004 Reaffirmed 2014	0.02 µg/m ³ to 50 µg/m ³
		Ammonia	Method of Air Sampling & Analysis (3rd edition-1988)	1 µg/m ³ to 400 µg/m ³
		Ozone	IS: 5182 (Part-9) 1974 Reaffirmed 2014	1.0 µg/m ³ to 200 µg/m ³
		Hydrogen sulphide	IS :5182 (Part-7) 1973 Reaffirmed 2014	1 µg/m ³ to 50 µg/m ³
		Arsenic	IS: 5182 (Part-22) 2004 Reaffirmed 2014/CPCB Guidelines	0.5 ng/m ³ to 100 ng/m ³
		Nickel	IS: 5182(Part-22) 1979/ 2004 Reaffirmed 2014/ CPCB Guidelines	1 ng/m ³ to 100 ng/m ³

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2.	Stack Emission	Particulate matter	IS 11255 (Part – 1) 1985 Reaffirmed 2017	5 mg/Nm ³ to 2000 mg/Nm ³
		Sulphur Dioxide	IS – 11255 (Part – 2) 1985 Reaffirmed 2014	5 mg/Nm ³ to 800 mg/Nm ³
		Nitrogen Dioxide	IS 11255 (Part-7) 2005 Reaffirmed 2017	5 mg/Nm ³ to 1000 mg/Nm ³
		Carbon Mono oxide	JMELPL/STOP/03 (Issue Date- 09.11.2017)	0.5 mg/Nm ³ to 100 mg/Nm ³
		Lead	Method of Air Sampling & Analysis (3rd edition-1988)	0.05 µg/Nm ³ to 10.0 µg/Nm ³
		Fluoride	IS:11255 (Part-5) 1990 Reaffirmed 2014	0.1 mg/Nm ³ to 50.0 mg/Nm ³
		Acid Mist	USEPA Method 8, March-2017	0.5 mg/Nm ³ to 100 mg/Nm ³

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CHEMICAL TESTING

<u>AT SITE</u>				
I.	ATMOSPHERIC POLLUTION			
1.	Ambient Noise Levels (Excluding Vibration)	Noise Level	IS 9989:1981 (RA 2008)	30 Leq to 130 Leq
2.	Source Noise Level-DG Set (Excluding Vibration)	Noise Level	IS 4758:1968 (RA 2017)	30 Leq to 130 Leq