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| Laboratory | Environmental Testing and Appraisal Laboratories, Environment Management Centre, Khasra No. 1102, Industrial Area, Salempur Rajputan, Roorkee, Uttarakhand | | |
| Accreditation Standard | ISO/IEC 17025: 2005 | | |
| Discipline | Chemical Testing | Issue Date | 14.10.2015 |
| Certificate Number | T-3617 | Valid Until | 13.10.2017 |
| Last Amended on | 18.01.2016 | Page | 1 of 8 |

| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|--------------|--|--|--|---|
| I. | WATER | | | |
| 1. | Potable, Domestic and Bore-well Water | pH | IS 3025 (Part 11): 1983 (RA 2002) Electrometric Method | 2 to 12 |
| | | Colour | IS 3025 (Part 4): 1983 (RA 2002) Colorimetric Method | 5 Hazen to 500 Hazen |
| | | Specific Conductance | IS 3025 (Part 14): 1985 Reaff.2013 Conductivity Metric Method | 1 μ S/cm to 10000 μ S/cm |
| | | Turbidity | IS 3025 (Part 10): 1984 (RA 2002) Turbitimetric Method | 1 NTU to 1000 NTU |
| | | Total Solids | IS 3025 (Part 15): 1984 Gravimetric Method | 5 mg/l to 10000 mg/l |
| | | Total Dissolved Solids | IS 3025 (Part 16): 1984 (RA 2002) Gravimetric Method | 5 mg/l to 10000 mg/l |
| | | Total Suspended Solids | IS 3025 (Part 17): 1984 (RA 2003) Gravimetric Method | 5 mg/l to 2000 mg/l |
| | | Total Hardness (as CaCO ₃) | IS 3025 (Part 21): 2009 EDTA Titrimetric Method | 2.0 mg/l to 1200 mg/l |

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| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|--------------|--|--|---|---|
| | Potable, Domestic and Bore-well Water | Calcium | IS 3025 (Part 40): 1991 (RA 2003) EDTA Titrimetric Method | 1 mg/l to 1000 mg/l 1 mg/l |
| | | Magnesium | IS 3025 (Part 46): 1994 (RA 2003) EDTA Titrimetric Method | 1 mg/l to 1000 mg/l 1 mg/l |
| | | Total Alkalinity (as (CaCO ₃)) | IS 3025 (Part 23): 1986 (RA 2005) Titrimetric Method | 5.0 mg/l to 750 mg/l |
| | | Chloride (as Cl) | IS 3025 (Part 32): 1988 (RA 2005) Argentometric Titration | 1.0 mg/l to 400 mg/l |
| | | Residual Free Chlorine | IS 3025 (Part 26): 1986 (RA 2003) APHA 4500 (B) Iodometric Method | 1.0 mg/l to 5.0 mg/l |
| | | Sulphate (as SO ₄) | IS 3025 (Part 24): 1986 (RA 2003) Gravimetric Method | 10 mg/l to 400 mg/l |
| | | Fluoride | IS 3025 (Part 60): 2008 APHA-4500fd | 0.1 mg/l to 100 mg/l 0.1 mg/l |
| | | Acidity(as (Caco ₃)) | APHA (22 nd Edition) 2310 B: 2012 Titration Method (Page 2-31 to Page 2-33) | 0 mg/l to 500mg/l |

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|--------------|--|--------------------------------|--|---|
| | Potable, Domestic and Bore-well Water | Volatile & Fixed Residue | IS 3025 (Part 18): 1984 (RA 2002) | 50 mg/l to 1000 mg/l |
| | | Settleable Matter | IS 3025 (Part 19): 1984 (RA 2002) | 5 mg/l to 5000 mg/l |
| | | Sodium as Na | IS 3025 (Part 45): 1993 (RA 2003) Flame Emission Method | 1 mg/l to 50 mg/l |
| | | Potassium | IS 3025 (Part 45): 1993 (RA 2003) Flame Emission Method | 1 mg/l to 100 mg/l |
| | | Iron | IS 3025 (Part 53): 2003 (RA 2003) Colorimetric Method | 0.01 mg/l to 100 mg/l |
| | | Phosphate | APHA 4500-D: 2012, Colorimetric Method Stannous Chloride Method | 0.01 mg/l to 100 mg/l 0.01 mg/l |
| | | Anionic Surfactant | IS 13428: 2005 Annexure K Colorimetric Method APHA 5540-C Anionic Surfactant (M.B.A.S.) | 0.1 mg/l to 100 mg/l 0.1 mg/l |
| | | Nitrate (as NO ₃) | IS3025 (Part 34) 1988 (RA 2003) Chromotropic Acid Method | 0.05 mg/l to 1000mg/l 0.05 mg/l |
| | | Chromium (VI) | IS 3025 (Part 52): 2003 APHA -3500-Cr Diphenyl Carbazide (DPC) Method | 0.03 mg/l to 1.0mg/l 0.03 mg/l |

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|--------------|-----------------------------------|--|---|---|
| 2. | Waste/Aqueous Effluents | pH | IS 3025 (Part 11): 1983 (RA 2002) Electrometric Method | 2 to 12 |
| | | Turbidity | IS 3025 (Part 10): 1984 (RA 2002) Turbitimetric Method | 0.1 NTU to 100 NTU |
| | | Total Solids | IS 3025 (Part 15): 1984 Gravimetric Method | 10 mg/l to 10000 mg/l |
| | | Total Dissolved Solids | IS 3025 (Part 16): 1984 (RA 2002) Gravimetric Method | 10 mg/l to 10000mg/l |
| | | Total Suspended Solids | IS 3025 (Part 17): 1984 (RA 2003) Gravimetric Method | 10 mg/l to 2000 mg/l |
| | | Total Hardness (as CaCO ₃) | IS 3025 (Part 21): 2009 EDTA Titrimetric Method | 2.0 mg/l to 1200 mg/l |
| | | Calcium | IS 3025 (Part 40): 1991 (RA 2003) EDTA Titrimetric Method | 1 mg/l to 1000 mg/l 1 mg/l |
| | | Magnesium | IS 3025 (Part 46): 1994 (RA 2003) EDTA Titrimetric Method | 1 mg/l to 1000 mg/l 1 mg/l |
| | | Chloride (as Cl) | IS 3025 (Part 32): 1988 (RA 2005) Argentometric Titration Method | 1.0 mg/l to 400 mg/l |

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|--------------|-----------------------------------|--|---|---|
| | Waste/Aqueous Effluents | Sulphate (as SO ₄) ⁻² | IS 3025 (Part 24): 1986 (RA 2003) Gravimetric Method | 10 mg/l to 400 mg/l |
| | | Fluoride as F ⁻ | IS 3025 (Part 60): 2008 APHA-4500fd Spadn's Method | 0.2 mg/l to 100 mg/l 0.1 mg/l |
| | | Sodium as Na | IS 3025 (Part 45): 1993 (RA 2003) Flame Emission Method | 1 mg/l to 50 mg/l |
| | | Potassium | IS 3025 (Part 45): 1993 (RA 2003) Flame Emission Method | 1 mg/l to 100 mg/l |
| | | Iron as Fe ²⁺ | IS 3025 (Part 53): 2003 (RA 2003) Colorimetric Method | 0.1 mg/l to 50 mg/l |
| | | Acidity(as CaCO ₃) | APHA (22 nd Edition) 2310 B: 2012 Titration Method (Page. 2 to 31 to Page. 2-33) | 0 mg/l to 500 mg/l |
| | | Volatile & Fixed Residue | IS 3025 (Part 18): 1984 (RA 2002) Gravimetric Method | 50 mg/l to 1000 mg/l |
| | | Settleable Matter | IS 3025 (Part 19): 1984 (RA 2002) Gravimetric Method | 5 mg/l to 5000 mg/l |

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|--------------|-----------------------------------|---------------------------------|--|---|
| | Waste/Aqueous Effluents | Ammonical Nitrogen | APHA 4500 (B) Titrimetric Method | 1 mg/l to 1,000 mg/l |
| | | Phosphate | APHA 2012, 4500 - D Colorimetric Method Stannous Chloride Method | 0.01 mg/l to 100 mg/l 0.01 mg/l |
| | | Anionic Surfactant | IS 13428: 2005 Annexure K Colorimetric Method APHA 5540-C Anionic Surfactant (M.B.A.S.) | 0.1 mg/l to 100 mg/l 0.1 mg/l |
| | | Nitrate (as NO ₃) | IS 3025 (Part 34): 1988 (RA 2003) Chromotropic Acid Method | 0.05 mg/l to 1000mg/l 0.05 mg/l |
| | | Biochemical Oxygen Demand (BOD) | IS 3025 (Part 44): 1993 (RA 2003) APHA 5210-B Winkler Method | 1 mg/l to 1200 mg/l |
| | | Chemical Oxidation Demand (COD) | IS 3025 (Part 58): 2006 Open Reflux Method | 5.0 mg/l to 70000 mg/l |
| | | Dissolved Oxygen (Do) | IS 3025 (Part 38): 1989 (RA 2003) Winkler Method Azide Modification Method | 1 mg/l to 20 mg/l |
| | | Oil & Grease | IS 3025 (Part 39)1991 (RA 2003) Gravimetric Method | 1 mg/l to 400 mg/l |

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|--|---------------------------------------|---|--|--|
| II. AIR, GASES & ATMOSPHERE | | | | |
| 1. | Ambient Air Quality Monitoring | Suspended Particulate Matters(SPM) | IS 5182 (Part 4): 1999 (RA 2005) | 10 µg/m ³ to 2000 µg/m ³ |
| | | Particulate Matter (Size Less Than 2.5µm) Or PM _{2.5} µg/M ³ | SOP/ EMC/TP-03, Issue No. 01, Dated 20.07.2015 | 10 µg/m ³ to 2000 µg/m ³ |
| | | Particulate Matter (Size Less Than 10µm) Or PM ₁₀ µg/M ³ (RSPM) | IS 5182 (Part 23): 2006 | 10 µg/m ³ to 2000 µg/m ³ |
| | | Sulphur Dioxide (SO ₂) µg/M ³ | IS 5182 (Part 2): 2001 | 6 µg/m ³ to 1050 µg/m ³ |
| | | Oxides Of Nitrogen (Nox) µg/M ³ | IS 5182 (Part 6): 2006 | 6 µg/m ³ to 750 µg/m ³ |
| | | Carbon Monoxide | SOP/EMC/TP-03, Issue No. 01, Dated 20.07.2015, By Co Analyzer | 1 µg/m ³ to 2000 µg/ m ³ |
| | | Ammonia | IS 3025 (Part 34) | 20 µg/m ³ to 500 µg/ m ³ |
| | | Ozone | IS 5182 (Part 9): 1974 | 20 µg/m ³ to 19000 µg/ m ³ |
| 2. | Stack Emission | Particulate Matter | IS11255 (Part 1): 1985 (RA 2001) | 5 mg/Nm ³ to 400 mg/Nm ³ |
| | | Sulphur Dioxide | IS 11255 (Part 2): 1985 | 10 mg/Nm ³ to 2000 mg/Nm ³ |
| | | Carbon Monoxide | IS:13270-1992 | 0.2 % by vol. to 10 % by vol. |
| | | Carbon dioxide | IS:13270-1992 | 1 % by vol. to 20 % by vol. |
| | | Oxygen | IS:13270-1992 | 1 % by vol. to 21 % by vol. |
| | | Nox | IS 11255 (Part 7): 2005 | 2.0 mg/Nm ³ to 500 mg/Nm ³ |

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|---------------------|--|---|---|--|
| SITE TESTING | | | | |
| 1. | Noise - Ambient & Source | Noise Levels Leq Db (A) Ambient | IS 9989: 1981 | 30 dB (A) to 130 dB (A) |
| | | Noise Levels - Source (Dg Sets Only) | IS 9989: 1981 | 30 dB (A) to 130 dB (A) |
| 2. | Luminescence (Measurement of light and density) | Light Intensity (In Terms Of Lux) | IS 3646 (Part 1): 1992 | 0 to 4000 |

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