

<b>Laboratory</b>	<b>West Bengal Waste Management Limited, J. L. No. 103, P. S. Sutahata, Haldia, West Bengal</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>22.04.2014</b>
<b>Certificate Number</b>	<b>T-2933</b>	<b>Valid Until</b>	<b>21.04.2016</b>
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<b>S. No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>I.</b>	<b>POLLUTION &amp; ENVIRONMENT</b>			
<b>1.</b>	<b>Liquid Effluent</b>	pH at 25 °C	APHA 22 <sup>nd</sup> Edition: 2012; 4500-H <sup>+</sup> B	2 to 12
		Temperature	APHA 22 <sup>nd</sup> Edition: 2012; 2550-A, B	Ambient to 60 °C
		Conductivity @ 25 °C	APHA 22 <sup>nd</sup> Edition: 2012; 2510 B	2 µS/cm to 100 mS/cm
		Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 2320 B	10 mg/L to 30000 mg/L
		Total Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 B	10 mg/L to 100000 mg/L
		Total Dissolved Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 C	10 mg/L to 100000 mg/L
		Total Suspended Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 D	10 mg/L to 10000 mg/L
		Fixed Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 E	10 mg/L to 50000 mg/L
		Volatile Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 E	10 mg/L to 10000 mg/L
		Chlorides as Cl <sup>-</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 Cl <sup>-</sup> B	10 mg/L to 50000 mg/L
		Sulphates as SO <sub>4</sub> <sup>-2</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 SO <sub>4</sub> <sup>-2</sup> D – Gravimetric Method	20 mg/L to 10000 mg/L

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	<b>Liquid Effluent</b>	Nitrate Nitrogen as N	IS 3025 (Part 34): 1988 (RA 2009)	1 mg/L to 1000 mg/L
		Nitrite Nitrogen as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 NO <sub>2</sub> - B	0.2 mg/L to 100 mg/L
		Nitrogen (Ammonia) as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 NH <sub>3</sub> B, C	1 mg/L to 1000 mg/L
		Nitrogen (Organic) as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 N B	1 mg/L to 1000 mg/L
		Fluorides as F <sup>-</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 F D	0.2 mg/L to 1000 mg/L
		Total Hardness as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 2340 C	10 mg/L to 50000 mg/L
		Dissolved Oxygen	APHA 22 <sup>nd</sup> Edition: 2012; 4500 O C	1 mg/L to 8.5 mg/L
		Oil & Grease	APHA 22 <sup>nd</sup> Edition: 2012; 5520 B	10 mg/L to 10000 mg/L
		Chemical Oxygen Demand	APHA 22 <sup>nd</sup> Edition: 2012; 5220 B	10 mg/L to 100000 mg/L
		Biological Oxygen Demand for 3 Day@ 27 °C	IS 3025 (Part 44): 1993 (RA 2009)	4 mg/L to 50000 mg/L
		Calcium as Ca	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Ca B	10 mg/L to 30000 mg/L
		Magnesium as Mg	APHA 22 <sup>nd</sup> Edition: 2012; 3500-Mg B	10 mg/L to 2000 mg/L

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	<b>Liquid Effluent</b>	Sodium as Na	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Na B	1 mg/L to 1000 mg/L
		Potassium as K	APHA 22 <sup>nd</sup> Edition: 2012; 3500 K B	1 mg/L to 1000 mg/L
		Cadmium as Cd	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.1 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 100 mg/L
		Hexavalent Chromium as Cr <sup>+6</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Cr B	0.1 mg/L to 100 mg/L
		Iron as Fe	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Fe B	0.1 mg/L to 100 mg/L
		Lead as Pb	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.3 mg/L to 100 mg/L
		Nickel as Ni	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 100 mg/L
		Silica as SiO <sub>2</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 SiO <sub>2</sub> C	0.5 mg/L to 100 mg/L
		Zinc as Zn	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.05 mg/L to 100 mg/L
		Copper as Cu	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.3 mg/L to 100 mg/L
		Turbidity	APHA 22 <sup>nd</sup> Edition: 2012; 2130 B	0.1 NTU to 100 NTU

**Rahul Jain**  
Convenor

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Program Manager

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2.	Hazardous / Solid Waste	pH	USEPA 1998 SW-846; 9045 C	2 to 12
		Bulk Density	DIN S- 4: 1984 ASTM D 5057-10	0.2 g/cc to 3 g/cc
		Calorific Value	IS 1350 (Part 2): 1975 (RA 2010)	(200 to 15000) cal/g
		Flash Point	USEPA 1998, SW-846; 1020 A	Ambient to 300 °C
		Moisture Content	IS 2362: 1993 (RA 2009)	(0.01 to 5 ) g/ 100 g
		Loss on Drying at 105°C	IS 10158: 1982 (RA 2009)	(1 to 90 ) g/ 100 g
		Loss on Ignition at 550°C	IS 10158: 1982 (RA 2009)	(1 to 99 ) g/ 100 g
		Paint Filter Liquid Test	USEPA 1998, SW-846; 9095 A	Qualitative (Present/Absent) (Free Liquid)
		Extractable Organics	USEPA 1998, SW-846; 3540 C	(1 to 9 ) g/1 mg
		Total Cadmium as Cd	USEPA 1998, SW-846; 3050 B, 7000 B	2 mg/kg to 5000 mg/kg
		Total Copper as Cu	USEPA 1998, SW-846; 3050 B, 7000 B	5 mg/kg to 5000 mg/kg
		Total Chromium as Cr	USEPA 1998, SW-846; 3050 B, 7000 B	10 mg/kg to 5000 mg/kg
		Hexavalent Chromium as Cr <sup>+6</sup>	USEPA 1998, SW-846; 7196 A	5 mg/kg to 5000 mg/kg
Total Lead as Pb	USEPA 1998, SW-846; 3050 B, 7000 B	5 mg/kg to 5000 mg/kg		

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	<b>Hazardous / Solid Waste</b>	Total Nickel as Ni	USEPA 1998, SW-846; 3050 B, 7000 B	10 mg/kg to 5000 mg/kg
		Total Zinc as Zn	USEPA 1998, SW-846; 3050 B, 7000 B	1 mg/kg to 5000 mg/kg
		<b>Metals in Leachate</b>		
		Chromium as Cr (TCLP)	USEPA 1998, SW-846; 1311 APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 1000 mg/L
		Arsenic as As (WLT)	USEPA 1998, SW-846/ Protocol for performance evaluation and monitoring of the CH WTDF including CHWI by CPCB, May 24, 2010. APHA 22 <sup>nd</sup> Edition: 2012; 3500 As B	0.1 mg/L to 100 mg/L
		Cadmium as Cd (WLT)	USEPA 1998, SW-846 / Protocol for performance evaluation and monitoring of the CH WTDF including CHWI by CPCB, May 24, 2010. APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.1 mg/L to 1000 mg/L
		Hexavalent Chromium as Cr <sup>+6</sup> (WLT)	USEPA 1998, SW-846 / Protocol for performance evaluation and monitoring of the CH WTDF including CHWI by CPCB, May 24, 2010. APHA 22 <sup>nd</sup> Edition: 2012; 3500 Cr B	0.1 mg/L to 100 mg/L

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	<b>Hazardous / Solid Waste</b>	Iron as Fe (WLT)	USEPA 1998, SW-846 / Protocol for performance evaluation and monitoring of the CH WTDF including CHWI by CPCB, May 24, 2010. APHA 22 <sup>nd</sup> Edition: 2012; 3500 Fe B	0.1 mg/L to 100 mg/L
		Lead as Pb (WLT)	USEPA SW 846: 1998/ Protocol for performance evaluation and monitoring of the CH WTDF including CHWI by CPCB, May 24, 2010.	0.3 mg/L to 100 mg/L
		Nickel as Ni (WLT)	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 100 mg/L
		Copper as Cu (WLT)	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.3 mg/L to 100 mg/L
		Zinc as Zn (WLT)	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	1 mg/L to 100 mg/L
<b>II.</b>	<b>WATER</b>			
<b>1.</b>	<b>Potable / Domestic Water</b>	pH @ 25 °C	APHA 22 <sup>nd</sup> Edition: 2012; 4500 H <sup>+</sup> B	2 to 12
		Temperature	APHA 22 <sup>nd</sup> Edition: 2012; 2550-A, B	Ambient to 60 °C
		Conductivity@25°C	APHA 22 <sup>nd</sup> Edition: 2012; 2510 B	2 µS/cm to 100 mS/cm
		Alkalinity as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 2320 B	10 mg/L to 30000 mg/L
		Total Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 B	10 mg/L to 100000 mg/L
		Total Dissolved Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 C	10 mg/L to 100000 mg/L

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	<b>Potable / Domestic Water</b>	Total Suspended Solids	APHA 22 <sup>nd</sup> Edition: 2012; 2540 D	10 mg/L to 10000 mg/L
		Chlorides as Cl <sup>-</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500-Cl <sup>-</sup> B	10 mg/L to 50000 mg/L
		Sulphates as SO <sub>4</sub> <sup>-2</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 SO <sub>4</sub> <sup>-2</sup> D - Gravimetric Method	20 mg/L to 10000 mg/L
		Nitrate Nitrogen as N	IS 3025 (Part 34): 1988 (RA 2009)	1 mg/L to 1000 mg/L
		Nitrite Nitrogen as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 NO <sub>2</sub> – B	0.2 mg/L to 1000 mg/L
		Nitrogen (Ammonia) as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 NH <sub>3</sub> B, C	1 mg/L to 1000 mg/L
		Nitrogen (Organic) as N	APHA 22 <sup>nd</sup> Edition: 2012; 4500 N B	1 mg/L to 1000 mg/L
		Fluorides as F <sup>-</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 F D	0.2 mg/L to 100 mg/L
		Total Hardness as CaCO <sub>3</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 2340 C	10 mg/L to 50000 mg/L
		Dissolved Oxygen	APHA 22 <sup>nd</sup> Edition: 2012; 4500 O C	1 mg/L to 8.5 mg/L
		Oil & Grease	APHA 22 <sup>nd</sup> Edition: 2012; 5520 B	10 mg/L to 10000 mg/L
		Chemical Oxygen Demand	APHA 22 <sup>nd</sup> Edition: 2012; 5220 B	10 mg/L to 100000 mg/L

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	<b>Potable / Domestic Water</b>	Biological Oxygen Demand 3 Days at 27 °C	IS 3025 (Part 44): 1993 (RA 2009)	4 mg/L to 50000 mg/L
		Calcium as Ca	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Ca B	10 mg/L to 30000 mg/L
		Magnesium as Mg	APHA 22 <sup>nd</sup> Edition: 2012; 3500-Mg B	10 mg/L to 20000 mg/L
		Sodium as Na	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Na B	1 mg/L to 1000 mg/L
		Potassium as K	APHA 22 <sup>nd</sup> Edition: 2012; 3500 K B	1 mg/L to 1000 mg/L
		Cadmium as Cd	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.1 mg/L to 100 mg/L
		Total Chromium as Cr	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 100 mg/L
		Hexavalent Chromium as Cr <sup>+6</sup>	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Cr B	0.1 mg/L to 100 mg/L
		Iron as Fe	APHA 22 <sup>nd</sup> Edition: 2012; 3500 Fe B	0.1 mg/L to 100 mg/L
		Lead as Pb	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.3 mg/L to 100 mg/L
		Nickel as Ni	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.5 mg/L to 100 mg/L
		Silica as SiO <sub>2</sub>	APHA 22 <sup>nd</sup> Edition: 2012; 4500 SiO <sub>2</sub> C	0.5 mg/L to 100 mg/L



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	<b>Potable / Domestic Water</b>	Zinc as Zn	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.05 mg/L to 100 mg/L
		Copper as Cu	APHA 22 <sup>nd</sup> Edition: 2012; 3111 B	0.3 mg/L to 100 mg/L
		Turbidity	APHA 22 <sup>nd</sup> Edition: 2012; 2130 B	0.1 NTU to 100 NTU
<b>III. AIR, GASES &amp; ATMOSPHERE</b>				
<b>1.</b>	<b>Ambient Air Monitoring</b>	Sulphur Dioxide	IS 5182 (Part 2): 2001 (RA 2012)	6 µg/m <sup>3</sup> to 1050 µg/m <sup>3</sup>
		Oxides of Nitrogen	IS 5182 (Part 6): 2006 (RA 2012)	6 µg/m <sup>3</sup> to 750 µg/m <sup>3</sup>
		Respirable Suspended Particulate Matter (PM10)	IS 5182 (Part 23): 2006 (RA 2012)	5 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Fine Particulate Matter(PM 2.5)	USEPA 40 CFR – Part 50/ 53, Appendix L : 2014	5 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>

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