

Sophisticated Analytical Instruments Laboratories Society, Patiala

Testing Charges: Chemical, Biochemical and Environmental Analysis

(w.e.f April, 2018)

A. WATER / WASTEWATER

Sr. no	Parameters	Unit Price (Rs.)
1	Acidity	200
2	Alkalinity (Phenolphthalein)	200
3	Alkalinity (Methyl orange)	200
4	Active detergent/Surfacants	750
5	Adsorbable organic halogen (AOX, EOX, POX)	3500 each
6	BOD & COD (both)	1200
7	COD	750
8	BOD	1000
9	Colour	250
10	Chloride	500
11	Sulfide	500
12	Chlorine (Residual)	200
13	Chlorine Demand	600
14	Conductivity	300
15	Salinity	500
16	Cyanide (by Ion Analyzer)	600
17	Dissolved oxygen (D.O.)	300
18	Fluoride (by Ion Analyzer)	600
19	Metals (by AAS) except Hg, As, Se	600 per metal
20	Metals (Hg)	1000
21	Metal (As, Se)	1000 each
22	Nitrogen-TKN (ammonical & organic)	1200
23	Nitrogen (Ammonical)	600
24	Free Ammonia	600
25	Nitrate (Spectrophotometrically)	600
26	Nitrite (Spectrophotometrically)	600
27	Oil & grease	500
28	pH	100
29	(A) Organochlorine Pesticides by GC (upto 17 compounds)	7000
	(B) PAH (Poly Aromatic Hydrocarbon) by GC	5000
30	Phenolic compounds (Spectrophotometrically)	750
31	Hardness (Total, Permanent, Temporary, Calcium, Magnesium)	200 each
32	Phosphate	600
33	Sulphates	500
34	Sludge volume index	800
35	Settled sludge volume (flocculation test)	500
36	Total dissolved solid	400
37	Total suspended solid	500
38	Total volatile solid	500
39	Odour/Taste	100 each
40	Temperature	100
41	Turbidity	300
42	Toxicity assay (bio-assay)	2500
43	Volatile fatty acids (Titration method)	400
44	MLSS	500
45	MLVSS	500

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Sr. no	Parameters	Unit Price (Rs.)
46	Boron (MPAES)	600
47	Chlorophyll (Spectrophotometrically)	1000
48	Carbon dioxide (Titrimetric)	400
49	Sodium Absorption Ratio (SAR)	1200
50	Residual Sodium Carbonate (RSC)	1200
51	Silica (in ppm level)	600
52	Silica (in ppb level)	1000
53	FM ratio (BOD ₅ + Flow)	1000
54	MPN/Coliform	700
55	Total Plate Count (TPC)	700
56	E-Coli	800
57	F- Coli	800
58	Yeast & Mould	800
59	Proteolytic bacteria	1000
60	Lipolytic bacteria	1000
61	Faecal Streptococci	700

Drinking Water (Essential parameters)		
Sr. no	Parameters	Unit Price (Rs.)
1	pH	100
2	Colour	250
3	Odour	100
4	Taste	100
5	Turbidity	300
6	Total Hardness as CaCO ₃	200
7	Total Alkalinity as CaCO ₃	200
8	Iron as Fe	600
9	Chloride as Cl	500
10	Residual Free Chlorine	200
11	Fluoride as F	600
12	Total Dissolved Solid (TDS)	400
13	Sulphate as SO ₄	500
14	Nitrate as NO ₃	600
15	Total Coliform	700
16	E. coli	800
17	Total Charges	6150
18	(In package from S. No. 1-16)	4500
19	Special package for limited parameters (pH, Turbidity, Total Hardness, Total Alkalinity, Iron, Chloride, Fluoride, Total Dissolved Solid, Total Coliform)	2000

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Drinking Water (as per IS:10500)

Sr. no	Parameters	Unit Price (Rs.)
1	Colour	250
2	Odour	100
3	pH	100
4	Taste	100
5	Turbidity	300
6	Total Dissolved Solid (TDS)	400
7	Aluminium as Al	600
8	Ammonia as NH ₃	600
9	Anionic Detergent as MBAS	750
10	Barium as Ba	600
11	Boron as B	600
12	Calcium as Ca	200
13	Chloride as Cl	500
14	Copper as Cu	600
15	Fluoride as F	600
16	Free residual Chlorine (RFC)	200
17	Iron as Fe	600
18	Manganese as Mn	600
19	Magnesium as Mg	200
20	Nitrate as NO ₃	600
21	Phenolic Compounds as C ₆ H ₅ OH	750
22	Selenium as Se	1000
23	Silver as Ag	600
24	Sulphate as SO ₄	500
25	Sulphide as S ⁻²	500
26	Total Alkalinity as CaCO ₃	200
27	Total Hardness as CaCO ₃	200
28	Zinc as Zn	600
29	Cadmium as Cd	600
30	Cyanide as CN	600
31	Mercury as Hg	1000
32	Lead as Pb	600
33	Molybdenum as Mo	600
34	Nickel as Ni	600
35	Pesticides (including sample preparation charges)	7000
36	Arsenic as As	1000
37	Chromium as Cr	600
38	Radioactive Materials	
I	Alpha emitters	1000
II	Beta Emitters	1000
39	Total Coliform	700
40	E. coli	800
41	Total Charges	28950
42	(In package from S. No. 1-40)	20000

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B. SOLID WASTE

Sr. no	Parameters	Unit Price (Rs.)
1	Ash/Organic matter	500
2	Arsenic, Selenium (by AAS)	1000 each
3	Organic Carbon (dichromate method)	500
4	Moisture	250
5	Metals (by AAS) except Hg, As, Se	600 each
6	Mercury (Hg)	1000
7	Nitrogen (TKN)	1000
8	pH	200
9	Phosphorous	600
10	Sulphur	800
11	Volatile & nonvolatile matter	500
12	Calorific value (GCV)	1000
13	Net Calorific Value (NCV)	1250
14	GCV + NCV (both)	1500
15	Silica as SiO ₂	1000
16	Sample preparation	400
17	Alcohol-Benzene solubility	400
18	Hot water solubility	400
19	N/10 NaOH solubility	400
20	Paint Filter Test (PFLT)	500

Sludge (Hazardous/Nonhazardous characteristics)

Sr. no	Parameters	Unit Price (Rs.)
1	Physical State	150
2	Colour	150
3	Texture	750
4	Violent Chemical Change in Air & Violent Change Without Detonation	250
5	Gross calorific Value	1000
6	Reacts violently with water	300
7	Explosion at normal temperature & pressure	250
8	Generating Toxic Fumes with water, Acid , Base	
I	Cyanide as CN	600 x 3 =1800
II	Sulphide as S ⁻²	500 x 3 =1500
9	Paint Filter Test (PFLT)	500
10	Flash Point	500
11	Loss on Drying @105°C	250
12	Loss on Ignition @ 550°C	500
13	pH (1:1)	350
14	Adsorbable Organic Chlorine (AOX)	3500
15	Nitrate as NO ₃	600
16	Total Phenols as C ₆ H ₅ OH	750
17	Fluoride as F	600
18	Ammonia	600
19	Hexane Extractable Organic	500
20	Ultimate Analysis	
I	Carbon Hydrogen, Nitrogen, Sulphur (Oxygen by difference)	2000
21	Metals (10% w/v water leachate)	
I	Cadmium as Cd	600
II	Chromium as Cr	600

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Sr. no	Parameters	Unit Price (Rs.)
III	Copper as Cu	600
IV	Lead as Pb	600
V	Mercury as Hg	1000
VI	Nickel as Ni	600
VII	Hexa Chromium as Cr ⁺⁶	600
VIII	Zinc as Zn	600
22	Total Metals	
I	Cadmium as Cd	600
II	Chromium as Cr	600
III	Copper as Cu	600
IV	Lead as Pb	600
V	Mercury as Hg	1000
VI	Nickel as Ni	600
VII	Hexa Chromium as Cr ⁺⁶	600
VIII	Zinc as Zn	600
23	Bioassay	2500
24	TCLP extraction charges	1500
25	Total charges	22000
26	(In package from S. No. 1-24)	15000

C. COAL / COKE / RICE HUSK

Sr. no	Parameters	Unit Price (Rs.)
1	Moisture	250
2	Ash, Volatile matter	500 each
3	Proximate (Moisture, Ash, V.M, F.C)	1500
4	Sulphur	800
5	Fixed Carbon (only)	1500
6	Calorific value (GCV)	1000
7	Net Calorific Value (NCV)	1250
8	GCV + NCV (both)	1500
9	Silica as SiO ₂	1000
10	Sieve analysis (size)	300 per sieve

D. PULP & PAPER

Testing will be performed by ACIRD and charges are applicable as per ACIRD rate list

E. LIME SLUDGE ANALYSIS

Sr. no	Parameters	Unit Price (Rs.)
1	Loss on ignition	500
2	Magnesium as MgO	600
3	Moisture	250
4	Residual CaO (active lime)	700
5	Residual alkali as Na ₂ O	600
6	R ₂ O ₃	800
7	Silica as SiO ₂	1000

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F. BLACK LIQUOR ANALYSIS

Sr. no	Parameters	Unit Price (Rs.)
1	Active alkali	600
2	Chlorides	800
3	Conductivity	400
4	Arsenic, Selenium (by AAS)	1000 each
5	Metals (by AAS) except Hg, As, Se	600 each
6	Mercury (Hg)	1000
7	PH	400
8	R ₂ O ₃	1200
9	Sulphated ash	1200
10	Silica content	1200
11	Sulphur	800
12	Sp. gravity at 30°C	400
13	Total solids	500
14	Total alkali	600
15	Viscosity (Brookfield)	600
16	Swelling Volume Ratio (SVR)	1200
17	Calorific value (GCV)-only	1000
18	Sulphate	800

G. SOIL

Sr. no	Parameters	Unit Price (Rs.)
1	Bulk density	150
2	Electrical conductivity (for aqueous solution)	250
3	PH	200
4	Water Holding Capacity	500
5	Texture - Sand, Silt, Clay (by hydrometer)	750
6	Porosity	600
7	Organic carbon (by dichromate method)	500
8	Available Nitrogen	1000
9	Available Phosphorous	600
10	Available Nitrate	600
11	Available Potassium	600
12	Sodium Absorption Ratio (SAR)	1200
13	Metals (by AAS) except As, Se, Hg	600 each
14	As, Se	1000 each
15	Hg	1000
16	Total Microbial Count (TPC)	800
17	MPN/Coliform	800
18	Sample preparation	400

H. FLY ASH

Sr. no	Parameters	Unit Price (Rs.)
1	Moisture	250
2	Loss on ignition	500
3	Silica as SiO ₂	1000
4	Aluminium as Al ₂ O ₃	600
5	Iron as Fe ₂ O ₃	600
6	Calcium as CaO	600
7	Magnesium as MgO	600

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Sr. no	Parameters	Unit Price (Rs.)
8	Soda Na ₂ O	600
9	Potash K ₂ O	600
10	Sulphur as SO ₃	800
11	Phosphorous as P ₂ O ₅	600
12	Sieve Analysis	300 per sieve

I. FOOD & VEGETABLES PRODUCTS

Sr. no	Parameters	Unit Price (Rs.)
1	PH	200
2	Ash/Organic matter	500
3	Chloride	600
4	Sulphate	500
5	Cyanide	600
6	Fat	750
7	Fibre	600
8	Moisture	250
9	Phosphorous	600
10	Nitrogen	1000
11	Proteins	1000
12	Reducing sugars	800
13	Metals (by AAS) except As, Se, Hg	600 each
14	As, Se	1000 each
15	Hg	800
16	Coliform detection	800
17	Total bacterial count (TPC)	950
18	Chlorinated Pesticides (including sample preparation charges)	7000

J. OILS & FATS

Sr. no	Parameters	Unit Price (Rs.)
1	Free fatty acids/acid value	450
2	Iodine value	700 *
3	Saponification value	550
4	Specific gravity	300
5	Volatile matter	500
6	Volatile suspended solid	700

*Note: (50% disc. will be applicable only for TIET against min. 3 no. of samples in a lot)

K. ACTIVATED CARBON

Sr. no	Parameters	Unit Price (Rs.)
1	Iodine adsorption value	750
2	Moisture	250
3	Sp. Gravity	300
4	Decolourizing Power (methylene blue adsorption)	750
5	Ash	600
6	Sieve Analysis	300 per sieve
7	Matter Soluble in Water	500
8	Matter Soluble in Acid	500
9	PH	200
10	Iron	600

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L. AIR

Sr. no	Parameters	Ambient Air	Stack
		(Rs./sample)	(Rs./sample)
1	Acid mist	---	600
2	NH ₃	600	600
3	Cl ₂	600	600
4	CO	1000 (by NDIR)	300
5	CO ₂	---	300
6	Gaseous fluoride	600	600
7	Metals (each element)	600	600
8	Arsenic	1000	1000
9	NO _x	500	500
10	NO ₂	500	500
11	O ₂	---	300
12	Particulate fluoride	600	600
13	Total fluoride (Particulate + Gaseous)	1200	1200
14	Particulate Matter (TSPM)	1000 (PM10)	1050
15	PM2.5	2500	--
16	SO ₂	500	500
17	Ozone	600	--
18	Benzo (a) pyrene (including sample preparation charges)	2000	
19	Benzene/ BTX (including sample preparation charges)	2000	
20	PAH (including sample preparation charges)	5000	
21	Temperature	100	200
22	Velocity	---	250
23	Noise (per location)	400	---
24	Sample preparation charges (in case of metals analysis)	400	400

M. Ambient Air Quality Test as per NAAQS, CPCB

Sr. no	Parameters	(for 8 hrs. sampling)	(for 24 hrs. sampling 8 hourly basis)
		(Rs./sample)	(Rs./sample)
1	Particulate Matter (PM10)	1000	3000
2	PM2.5	2500	2500
3	SO ₂	500	1500
4	NO _x	500	1500
5	CO	1000 (by NDIR)	1000
6	Ozone	600	600
7	NH ₃	600	600
8	Arsenic	1000	3000
9	Nickel	600	1800
10	Lead	600	1800
11	Benzo (a) pyrene	2000	6000
12	Benzene/ BTX	2000	6000
13	(In package from S. No. 1-12)	10,000	20,000
14	Note: Sampling & visiting charges will be applicable extra as per rate list		

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M. SAMPLING / COLLECTION CHARGES

Sr. no	Activity	Price (Rs.)
1	Monitoring visit charges	Rs. 3000.00 for upto 100 km distance
		Additional Rs.1000.00 for every additional 50 km distance
2	Grab sampling of water, wastewater, soil, sludge etc.	No charges for the first 2 hours of sampling and Rs.1000.00 for every 4 hours of sampling
3	Composite samples of wastewater streams	Rs. 3000.00 for a compositing period upto 10 hours
		Rs. 8000.00 for a compositing period of 24 hours
4	Ambient air sampling	Rs. 2000.00 for the first location and Rs.1000.00 per location for subsequent locations if sampling period is 8 hours or less
		Rs. 3000.00 for the first location and Rs. 1000.00 per location for subsequent locations if sampling period is > 8 hours upto 24 hours
5	Stack monitoring	Rs. 1500.00 per stack

- Note:
- Expenses associated with the night stay shall be borne by the customer.
 - Sampling/collection charges for more than 500 km will be provided on request.

N. MATERIALS TESTING & CHARACTERIZATION

Sr. no	Parameters	Unit Price (Rs.)
1	Mass of Zn coating (including sample preparation)	750
2	Sample preparation and metallography study by Scanning Electron Microscope	1000
3	Chemical analysis of Brass & Steel (per element)	600
4	Chemical analysis of Steel by Optical Microscopy (out sourcing)	2000
5	Thickness of sheet	200

O. INSTRUMENTAL ANALYSIS

S. No.	Instrument	Parameters	Unit Price (Rs.)
1	Organic Halogen Analyzer	AOX, EOX, POX, Organic Sulphur	3500
2	Atomic Absorption Spectrometer	Metals other than Hg, As, Se	600 each
		As, Se	1000 each
3	Mercury Analyzer	Hg	1000
4	UV-VIS spectrometer (200-800 nm)	Chemical Analysis	600 per scan
5	Bomb Colorimeter	GCV	1000
6	Flame Photometer	Na, K	600 each

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S. No.	Instrument	Parameters	Unit Price (Rs.)
7	Gas Chromatograph (including sample preparation charges)	Analysis of PAH & Residual chloro pesticides	PAH-5000
			Chloro pesticides-7000
8	Metallography study by Scanning Electron Microscope (including sample preparation charge)	Identification of Cast iron/Ductile iron	1000
9	Brookfield Viscometer	Viscosity in cps	500
10	Kinematic Viscosity	Viscosity in cst	750
11	Ion Analyzer (Ion selective method)	F ⁻ , CN ⁻	600 each
12	Radiation counting system	Alpha, beta, gamma emitters	1000 each

P. IC ENGINE

Sr. no	Parameters	Unit Price (Rs.)
2	Swirl testing of engine cylinder head ports (on Ricardo Swirl Rig, G. Cusson Technology, UK)	
I	Testing of cylinder head of engine (Inlet)	3000 per port
II	Testing of cylinder head of engine (Exhaust)	3000 per port

Q. TRANSFORMER OIL

Sr. no	Parameters	Unit Price (Rs.)
1	Appearance (Physical)	100
2	Density	250
3	Kinematic Viscosity	
I	@ 90°C	750
II	@ 27°C	750
III	@ 40°C	750
4	Flash Point	400
5	Pour Point	500
6	Neutralization Value (Inorganic)	500
7	Neutralization Value (Total acidity)	500
8	Electric Strength (Break Down Voltage-BDV)	600
9	Total Sulphur	800
10	Dielectric Dissipation Factor at 90°C (Tan δ)	700
11	Specific Resistance at 90°C	700
12	Water Content (Dean Stark Method)	900
13	Sludge/sediment	500
14	Dissolved Gas Analysis: (CH ₄ , C ₂ H ₆ , C ₂ H ₄ , C ₂ H ₂ , CO, CO ₂)	1200 (per component)
		5000 (Total)

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Q. FURNACE OIL

Sr. no	Parameters	Unit Price (Rs.)
1	Density	250
2	Kinematic Viscosity at 27°C	750
3	Flash Point	400
4	Pour Point	500
5	Ash	500
6	Neutralization Value (Total acidity)	500
7	Total Sulphur	800
8	Water Content (Dean Stark Method)	900
9	Sludge/sediment	500
10	Calorific Value (GCV)	1000

- Note:**
- i) GST extra as applicable
 - ii) Additional Rs. 1000.00 per sample will be charged in case of consent purposes of t/

**(Professor-Incharge, SAI Labs)
Patiala**