

PLAINTIFF'S EXHIBIT

SH-3102

AIHA-Accredited
CDC-Licensed
State of Michigan-Licensed
EPA-Accepted

Clayton Environmental Consultants, Inc.

ANALYTICAL LABORATORIES FEE SCHEDULE

September 1, 1982

LAM 014194

serving industry and government since 1954

DPMC-15454

INDUSTRIAL HYGIENE ANALYSES

GRAVIMETRIC

Coal Tar Pitch Volatiles (CTPV, benzene solubles)	See Wet Chemical Analyses	Particulates (total or respirable)	\$8
		Oil Mist (gravimetric only)	8

MICROSCOPY, X-RAY DIFFRACTOMETRY, X-RAY SPECTROSCOPY

Asbestos		Silica, Crystalline	
Fiber Count (filter)	\$24	X-ray Diffractometry	
Polarized-Light Microscopy (bulk)	25	(filter)	\$38
X-Ray Diffractometry (bulk)	50	(bulk)	60
Scanning Electron Microscopy/		Fiber Identification	
Energy Dispersive X-ray Spectroscopy		(polarized-light microscopy)	25
(filter)	150	Particle Size Distribution	50
(bulk)	225		

ATOMIC ABSORPTION SPECTROPHOTOMETRY

Common Metals*		Mercury (flameless)	\$35
First Metal	\$15	Platinum (graphite furnace)	20
Each Additional Metal	12	Selenium	
Arsenic, Arsenic		(graphite furnace)	20
(graphite furnace)	20	(hydride generation)	35
(hydride generation)	35	Vanadium (graphite furnace)	20
Chromium, Hexavalent	See Wet Chemical Analyses		

*Aluminum, antimony, barium, beryllium, bismuth, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, molybdenum, nickel, palladium, potassium, silver, sodium, tin, titanium, and zinc. Because of required sample preparation, an additional \$40.00/sample will be charged for bulk samples.

WET CHEMICAL ANALYSES

Ammonia (colorimetric)	\$22	Methylene Bisphenyl Isocyanate (MDI)	
Chloride (ion selective electrode)	20	(colorimetric)	\$25
Chlorine (residual chlorine electrode)	20	Nitric Acid (colorimetric)	25
Chromium, Hexavalent (colorimetric)	25	Nitrogen Oxides (NO ₂ -NO NIOSH tube)	
Coal Tar Pitch Volatiles (benzene solubles) ...	28	(both sections)	40
Cyanide (ion selective electrode)	20	Oil Mist (fluorimetric)	35
Fluoride (ion selective electrode)		Phosphate (total) (colorimetric)	30
Soluble	20	Phosphine (colorimetric)	30
Total	35	Stibine (colorimetric)	30
Formaldehyde (chromotropic acid colorimetric)		Sulfur Oxides (SO ₂ , SO ₃ , SO ₄ ²⁻) (titrimetric)	25
Impinger	22	Sulfuric Acid (titrimetric)	25
Passive Monitor	22	Toluene Diisocyanate (TDI) (colorimetric)	25
Hydrogen Sulfide (colorimetric)	30		

ION CHROMATOGRAPHY

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Common Species*		Each Additional Component	\$25
First Component	\$35		

*Ammonia, bromide, chloride, fluoride, formaldehyde, formic acid, nitrate, nitrite, perchlorate, phosphate, sulfate, sulfite, and thiocyanates.

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GAS CHROMATOGRAPHY

Common Organics*

Charcoal Tubes (both sections) and Passive Dosimeters (DuPont, 3M, etc.)	
First Component	\$25
Each Additional Component	15
Amines (thermionic detector)	35
Kerosene	40
Mineral Spirits	40
Pesticides (DDT, DDVP, Malathion, etc.) (electron capture)	40
(flame photometric)	40

Polychlorinated Biphenyls (PCB)

(electron capture, Hall conductivity)	
Air	\$60
Transformer Oil	50
Soil	70
Wipe Samples	65
Stoddard Solvent	40
Total Hydrocarbons	30
VM&P Naphtha	40

*Acetone, benzene, butyl Cellosolve, Cellosolve, Cellosolve acetate, chloroform, ethylene oxide, isopropyl alcohol, methyl chloroform, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, phenol, styrene, toluene, trichloroethylene, vinyl chloride, xylene, etc.

GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Setup and Sample Preparation Charge

First Sample	\$175
Each Additional Sample	50
Compound Identification	30/identification
Quantitation	25/compound

Confirmation of Compounds from GC Analysis

Setup	\$50
Compound Identification	20
Direct Insertion Probe	200
Special Mass Spectrometry Projects	75/hr

SCANNING ELECTRON MICROSCOPY/ENERGY-DISPERSIVE X-RAY SPECTROSCOPY

Scanning Electron Microscopy/

Energy-Dispersive X-Ray Spectroscopy \$75/hr

Electron Micrographs \$5/print

HIGH PRESSURE LIQUID CHROMATOGRAPHY

Benzidine and Derivatives	\$60
Isocyanates (HDI, IPDI, MDI, TDI)	
First Component	65
Each Additional Component	30
Herbicides	
2, 4-D	55
2, 4, 5-T	55
MOCA [®] (4,4'-methylene bis-(2-chloroaniline))	60

Organic Acids	\$55
Pentachlorophenol	55
Phthalates	55
Polynuclear Aromatics (PNA)	
First Component	55
Each Additional Component	30
PNA Scan (16 specific PNA) Qualitative	150

BIOLOGICAL ANALYSES

Analyte	Blood	Urine	Tissue
Asbestos (electron microscopy)	—	—	\$400
Arsenic	\$50	\$30	75
Benzidine	—	65	—
Beryllium	25	25	50
Cadmium	25	25	50
Fluoride	—	30	—
Lead*	12	—	—
Mercury	50	50	—
MOCA [®]	—	65	—
Nickel	—	25	50
Phenols	—	30	—
Selenium	50	50	—
Silica	—	—	125

*Please inquire about discounts.

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HAZARDOUS WASTE ANALYSES

HAZARDOUS WASTE (RCRA)

Number of Samples	1-3	4-10	11-20
Corrosivity (pH)	\$5	\$5	\$5
EP Toxicity			
Extraction Procedure (EP)			
Dirt, Sludges	75	65	45
Oil, Grease, Paint	150	100	75
EP Extract Analyses			
8 Metals	150	140	125
6 Organics	250	240	230

HAZARDOUS WASTE CHARACTERIZATION

Organics by Gas Chromatography/Mass Spectrometry

See Gas Chromatography/Mass Spectrometry Fees (p.3).

Inorganics by Scanning Electron Microscopy/Energy-Dispersive X-Ray Spectroscopy

See Scanning Electron Microscopy/Energy-Dispersive X-Ray Spectroscopy Fees (p.3).

WASTEWATER ANALYSES

EPA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

PART C (Priority Pollutant Analyses)

Number of Samples	1-3	4-10	11-20
Complete Analysis (128 compounds)	\$975	\$875	\$825
Organics via GC/MS (113 compounds)	750	675	650
Base-Neutral Fraction	250	230	210
Acid Fraction	225	205	185
Volatile Fraction	240	210	190
Pesticides	220	200	180
Metals (13 metals)	175	160	145
Phenol	25	20	15
Cyanide	25	20	15

PART B (Conventional/Non-Conventional Pollutants)

Bromide \$15	Radioactivity inquire	Cobalt \$10
Chlorine 15	Sulfate (as SO ₄) \$15	Iron 10
Fecal Coliform 20	Sulfide (as S) 15	Magnesium 10
Color 6	Sulfite (as SO ₃) 15	Manganese 10
Fluoride 15	Surfactants 25	Molybdenum 10
Nitrate-Nitrite (N) 20	Aluminum 10	Tin 10
Oil and Grease 25	Barium 10	Titanium 10
Phosphorous, Total 15	Boron 10	

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SAFE DRINKING WATER ACT (SDWA)

Primary Drinking Water Standards

Pesticides (endrin, lindane, methoxychlor, and toxaphene)	\$100/set
Herbicides (2,4-D, 2,4,5-T)	120/set
Trihalomethanes	
Purge & Trap (GC/MS)	75
Liquid/Liquid Extraction (GC)	60

Inorganics	\$175/set
(arsenic, barium, cadmium, chromium, fluoride, lead, mercury, nitrate (NO ₃ as N), selenium, and silver)	
Radioactivity	inquire
Fecal Coliform	\$20
Turbidity	10

Organic Parameters

Pesticides (water)	\$250/set, 30/each
(aldrin, chlordane, DDD, DDE, DDT, diazinon, dieldrin, endrin, ethyl parathion, heptachlor, lindane, malathion, methoxychlor, methyl parathion, and toxaphene)	

Polychlorinated Biphenyls (PCB)	
Oil	\$50
Soil	70
Water	75

Inorganic Parameters

Acidity	\$15
Alkalinity	15
Ammonia (as N)	20
BOD	30
COD	25

Hardness	\$10
pH	5
Specific Conductance	5
Total Organic Carbon (TOC)	30
Total Organic Halogen (TOH)	50

Solids	
Dissolved	\$15
Total	15
Suspended	15

AIR POLLUTION ANALYSES

Particulate

US EPA Method 5	
Filterable (filter and probe wash)	\$30
Total (filter, probe wash, and impinger)	45
Chloroform/Ether Extraction (filter and impinger)	75
US EPA Method 17 (filter and acetone wash)	30

ASME PTC 27-1957 (thimble and acetone wash)	\$30
MAPCC Method 5A (probe, impinger, and filter)	45
MAPCC Method 5B or 5C (probe wash and two filters)	45
High Volume Filterable Particulates	10
Particle Size (cascade impaction)	85

Gaseous Inorganic

EPA Method 6 (sulfur dioxide)	\$30
EPA Method 7 (nitrogen oxides)	30
EPA Method 8 (sulfuric acid mists and sulfur dioxide)	50

EPA Methods 13A or 13B (fluorides)	\$75
EPA Methods 101, 101A, and 102 (mercury) ...	40

Gaseous Organic

EPA Method 23 (halogenated organics)	inquire
EPA Method 24 (volatile matter content, etc. of surface coatings)	inquire

EPA Method 25 (total gaseous nonmethane organics (TGNMO))	\$125
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Please inquire for more information regarding Clayton onsite sampling services.

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- This is a partial list of analyses we perform. Please contact the Laboratory Director for additional information regarding fees and sampling and analytical procedures.
 - The minimum fee for any laboratory analyte is three times the listed fee or \$75, whichever is **LOWER**.
 - Filter cassettes and impinger solutions are supplied at no charge. Silver membrane filters are supplied at the replacement cost.
 - Shipping containers will be supplied at no charge.
 - Fees for analyses of 20 or more of the same analyte in a single shipment will be discounted 10%.
 - Additional discounts will be negotiated for large-volume and/or repetitive submittals.
 - There is no charge for one or two blank samples submitted with a batch of samples.
 - Special projects will be performed on a quotation basis.
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OTHER SERVICES . . .

- industrial hygiene surveys
- emission and ambient testing
- hazardous waste management
- air and water pollution control design and engineering
- noise studies and engineering design
- expert testimony

Main Office

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Laboratories

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*Formerly Occupational Health Services.

a technical service of Marsh & McLennan

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