



Our Capabilities



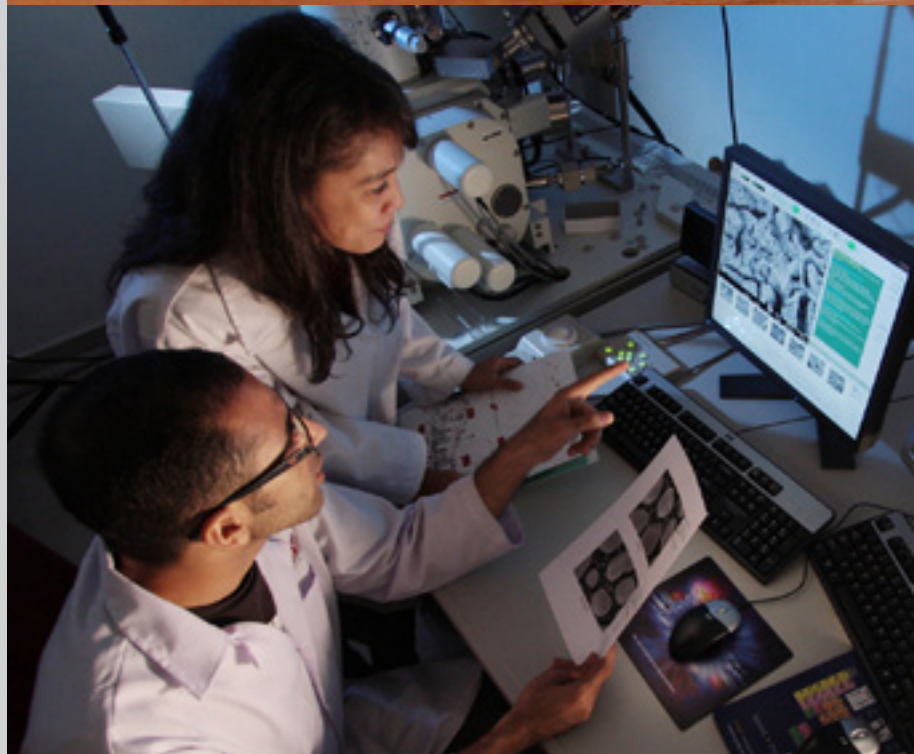
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Corporate Profile

Envirolab's strength lies in the delivery of quality results and a rapid turnaround that can be customised to your scientific testing requirements

Envirolab Group is the largest Australian owned and privately operating environment laboratory in Australia. Operating under the brands, Envirolab Services and MPL Laboratories, we are committed to providing clients with a rapid turnaround and quality customer service for scientific testing of environment contamination.

Test methods and internal procedures of all Envirolab laboratories are compliant with Australian standards and regulations. We take pride in being accredited by industry authorities including the National Association of Testing Authorities (NATA) for a range of tests.

Some of our testing capabilities include soil, water, air and occupational hygiene samples for a range of organics, inorganics, microbiological, and forensic toxicology analysis. Our team can assist you to make informed decisions based on a suite of testing services available for identifying the presence of asbestos, leachate analysis and acid sulfate soils.

For emerging contaminants, we test for Perfluorinated Alkylated Substances (PFAS), methamphetamine residue left by clandestine labs and various other environmental residues and contaminants as required by the needs of your brief. Our Quarantined Approved Premises in Sydney and Perth hold a permit to import waters and soils from all countries.



Summary of Capabilities

Logistics Support

From start to finish, Envirolab identifies and provides scientific testing solutions that meet unique specifications. By working closely with clients, our team will establish the necessary procedures for an efficient and effective analytical service.

Some of these procedures include:

Reporting Limits

The entry of data, including reporting limits ensures consistency of analysis for ongoing sample batches.

Report Formatting

From performing test runs and ongoing adjustments, we work with our clients to establish a standard report format.

Where required, this also allows for the automatic upload of all analytical data into the site database.

Bottles / Jars

Based on our client needs, we determine sample material and volume requirements for bottles, jars and eskies.

We then work with our clients to implement a scheduled program for deliveries where, if appropriate, bottles can also be packed into sets to save sorting on-site.

Timeliness of Deliveries

Deliveries of bottles, jars and eskies are normally scheduled the month before the analysis of samples is scheduled.

The timeline for delivery is also confirmed with our client prior to commencement, so adequate stocks of required items on-site is assured. Additional items or stocks can also be sent up at any time on request.

Interim Reports

To obtain selected analytical data as soon as available and ahead of the other results, interim reports can be issued at no extra charge. These can also be requested on each COC.

Online Results

Results can be accessed as they become available, through our innovative and easy-to-use online portal.



Technical Support

Apart from personalised service and fast turnarounds. Envirolab takes pride in providing technical support.

Our wide range of analytical in-house services and sample matrices provide an ideal one-stop shop across a number of client departments and consultancy areas.

At an operational level, we maintain a high ratio of senior and experienced staff to assist clients with all manner of technical queries at any time. All senior staff are readily contactable by phone and email and will respond to queries promptly at all times.

Our staff focused culture has also resulted in a very low turnover, so you can be confident that you will be working with the same team.

Innovation

Envirolab invests in equipment and resources for the introduction of new analytical methods, while also ensuring that technologies already in use are the most current on the market.

PCR instrumentation was purchased in 2014 for performing in-house speciation of *Naegleria* (a key requirement for amoebae analysis in water samples). Our laboratory in Perth is the **ONLY** laboratory in Western Australia with this capability and only one of two laboratories in Australia.

Envirolab is equipped with three Inductively Coupled Plasma Mass Spectrometers with Octopole Reaction Cells (ORC-ICP-MS). These are used for determining low level elements in a diverse range of sample matrices and for the determination of bioavailable elements. They are particularly useful for detection of low level, interference free, metals in saline waters.

Envirolab Group is continually looking for new and emerging contaminants to be added onto our analytical scope. Our array of instrumentation includes a GC/QQQ and an LC-MS/MS which are used both in routine analyses as well as project-specific analyses including nicotine, Trenbolone, Prozac, ureas and PFAS compounds.



Soil and Sediment Acid Sulfate Soils

Turnaround Time

We offer a standard 5 working day TAT for SPOCAS or SCr Suite analysis. Faster TAT's are available though surcharges may apply.

Sampling

A minimum of 200g should be collected in zip-lock bags to minimise contact with air. Large shells, wood, charcoal and stones should be removed in the field, but biological remnants such as roots should not be removed.

Samples should be kept cold in the field and should reach the lab within 24 hours of collections. Where this is not possible, they should be either frozen or dried at 85°C to extend holding time.

Acid Sulfate Soils

- SPOCAS • pH KCl • TAA
- KCl extractable S, Ca, Mg
- pHox • TPA
- Peroxide extractable S, Ca, Mg
- ANCe
Excess Neutralisation capacity
- SNAS *Retained acidity*

SPOCAS

- pH KCl • TAA • pHox
- KCl extractable S, Ca, Mg
- TPA
- Peroxide extractable S, Ca, Mg
- ANC
Excess Neutralisation capacity
- SNAS *Retained acidity*

Chromium Reducible Sulfur

- SCr, pH KCl, TAA
- If pH:
<4.5 - SNAS performed
>6.5 - ANC performed

Field Test

- pHF • pHFOX
- Reaction Rate



Soil and Sediment Acid Mine Drainage

Acid Mine Drainage

- pH Paste (1:2)
- EC Paste (1:2)
- Total Sulphur
- Sulphate Sulphur
- Sulphide Sulphur
- Acid Soluble Sulphur
SHCl - 4M HCl extraction
- Total Oxidisable Sulphur
- Total Carbon
- TOC *by CS Analyser*
- Total Inorganic Carbon
- NAG including NAG pH
- NAG - Extended Boil
- NAG Sequential / per stage
- NAG Kinetic
- ANC
- Acid Buffering Characteristic Curves **ABCC**
- APP/MPA *requires also Total S determination - see above*
- NAPP **ABA Package - Includes ANC, APP, Total S**
- Column Leaching
Free Draining
- Metals by 4 acid digest and ICP scan
- Basic AMD Suite: Sample Prep, EC (1:2), pH (1:2), NAG and NAG pH
- NAPP *includes ANC and Total S*



Soil and Sediment Agricultural

Agricultural

- Cation Exchange Capacity (CEC) - NH₄Cl
- Cation Exchange Capacity (CEC) - NH₄Cl and ESP
- DTPA or EDTA or Mehlich3 Extractable Metals
- Exchangeable Sodium Percent **ESP - includes CEC**
- P Sorption Capacity
- P Buffer Index **PBI**
- P Retention Index **PRI**
- P Colwell
- P Bray
- Emerson Aggregate Test
- Sodium Absorption Ratio **SAR**



Soil and Sediment Asbestos

Asbestos

- Soil or dust
up to 100g sample

- Soil - Clay based
East Coast NEPM

- Soil - Sandy
WA Dept Health



Soil and Sediment Inorganics and Metals

Physical

- Compositing
- Moisture
- Aggressivity
Cl, SO₄, pH, EC, Resistivity
- Clay Content
- Conductivity *1:5 water soluble*
- Electrical Conductivity *EC*

- Loss on Ignition *LOI*
- pH *1:5 soil:water*
- pH *1:2 soil:water*
- pH *CaCl₂ extraction*
- pH_F
- pH_{FOX}

- Resistivity *Current*
- Resistivity *Calc.*
- Salinity
- Texture
- Texture/Salinity
Classification

Anions

- Bromide (Br)
1:5 water soluble
- Bromine and/or Iodine
- Chloride (Cl) *1:5 water soluble*

- Chloride (Cl)
total mainly concrete
- Fluoride *total by fusion*
- Fluoride *1:5 water soluble*

- Iodide *water soluble*
- Sulphate (SO₄)
water soluble



Alkalinity

- Acidity - 1:5 water soluble
- Alkalinity - 1:5 water soluble
- Acidity + Alkalinity - 1:5 water soluble
- Carbonates *estimate*

Carbon / Organic Matter

- Total Organic Carbon (TOC) / Total Organic Matter (TOM) by titration *Walkley Black*
- Total Organic Carbon (TOC) / Total Organic Matter (TOM) by combustion *sediments*
- Total Carbon

Cyanides

- Cyanide- Total
- Cyanide - Free
- Cyanide - Weak Acid Dissociable *WAD*
- Cyanide Amenable *Amenable to Chlorination - labile*
- Cyanide Amenable *Amenable to Chlorination - labile*
- Foreign Matter
- Foreign Matter - ENM *Rubber, plastic, bitumen, paper, cloth, paint, wood*
- Foreign Matter - Aggregates *Rubber, plastic, paper, cloth, paint, wood, other vegetable matter*
- Foreign Matter *Railway Ballast*
- Foreign Matter - Fines *glass, metal, rigid plastic, light flexible film*
+ Sieving *proportion retained on sieves 0.425, 9.5 & 26.5mm*
- Nutrients
- Ammonia (1:5) as N *water or KCl extraction*
- Nitrate as N *water soluble*
- Nitrite as N *water soluble*
- NOX *water soluble*
- Organic N *TKN - NH3*
- Inorganic N *NOX + NH3*
- Total Kjeldahl Nitrogen *TKN*
- Total Nitrogen - TKN+ NOx
- Total Nitrogen - TKN + NO₂ + NO₃
- Phosphate (PO₄) as P *water soluble*
- Phosphate Sorption Index *PSI*
- Particle Sizing *PSD*
- Clay only *i.e. <2µm Hydrometer*
- Particle Size Distribution *Sieving only (75mm - 75µm)*
- Particle Size Distribution - *Hydrometer only*
75-20µm
<20-2µm
<2µm
Clay fraction
- Particle Size Distribution - Sieving and Hydrometer *as above*
- RTA - Sieving *proportion retained on sieves 0.475, 9.5 & 26.5mm*
- Sulphur forms
- Acid Volatile Sulphur *AVS*
- SEM *Simultaneous Extractable Metals*
- Sulphate (SO₄) *water soluble*
- Sulphide *Pres/Abs*
- Sulphide - Total *NEPM, B3 section 9.4 - acid soluble and insoluble*
- TOS *Total Oxidisable Sulfur*
- Miscellaneous
- MBAS (Surfactants) water soluble
- Oxidant Demand *NOD/SOD* includes residual persulfate over 1-4 time periods with buffer capacity
- Sugar in soil/concrete



Metals

- | | | | |
|-------------|--------------|--------------|----------------|
| • Aluminium | • Tin | • Gallium | • Niobium |
| • Strontium | • Cerium | • Germanium | • Osmium |
| • Antimony | • Titanium | • Gold | • Palladium |
| • Sulphur | • Chromium | • Hafnium | • Phosphorus |
| • Arsenic | • Tungsten | • Holmium | • Platinum |
| • Tantalum | • Cobalt | • Indium | • Praseodymium |
| • Barium | • Uranium | • Iridium | • Rhenium |
| • Tellurium | • Copper | • Iron | • Rhodium |
| • Beryllium | • Vanadium | • Lanthanum | • Rubidium |
| • Terbium | • Dysprosium | • Lead | • Ruthenium |
| • Bismuth | • Ytterbium | • Lithium | • Samarium |
| • Thallium | • Erbium | • Lutetium | • Scandium |
| • Boron | • Yttrium | • Manganese | • Selenium |
| • Thorium | • Europium | • Mercury | • Silicon |
| • Cadmium | • Zirconium | • Molybdenum | • Silver |
| • Thulium | • Gadolinium | • Neodymium | |
| • Caesium | • Zinc | • Nickel | |

Specialty Metals

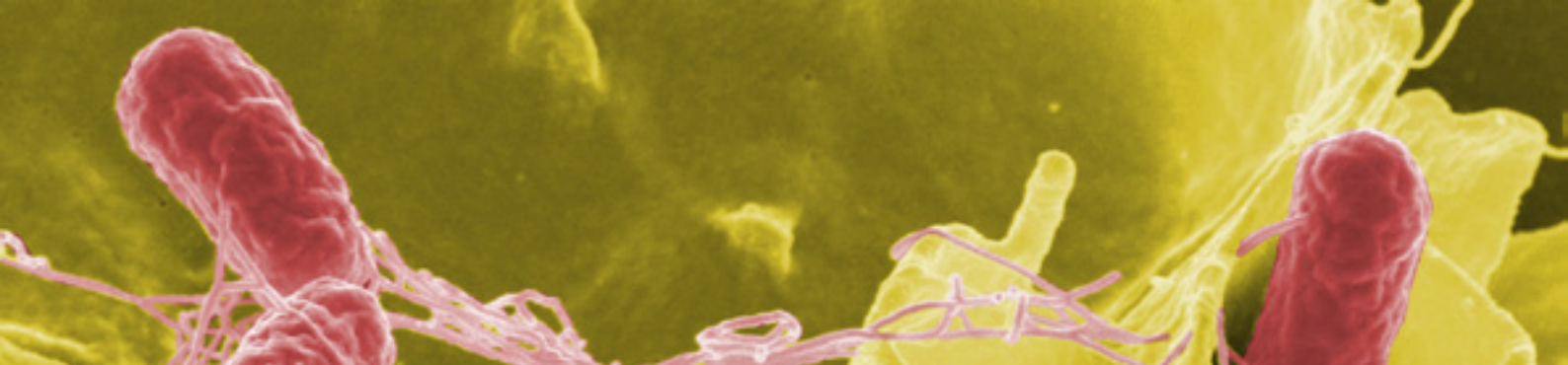
- | | | |
|---|--|--|
| • Arsenic (Speciated)
<i>water soluble</i> | • Bromine and/or Iodine | • PBET - <i>Physiological Based Extraction Test - various metals</i> |
| • AVS + SEM | • Dilute Acid Extractable Metals <i>1M HCl</i> | • SEM |
| • Bioavailable Metals
<i>see DTPA or EDTA or Mehlich or Dilute Acid Extractable Metals or PBET (see agriculture)</i> | • DTPA or EDTA or Mehlich3 Extractable Metals | • Simultaneous Extractable Metals |
| | • Hexavalent Chromium <i>Cr6+</i> | • Silicon as SiO ₂
<i>caustic fusion</i> |
| | • Methyl Mercury | • Sodidity <i>see ESP above</i> |

Cations: ICP-OES

- Cation Suite
Acid Extractable
Ca, K, Mg, Na

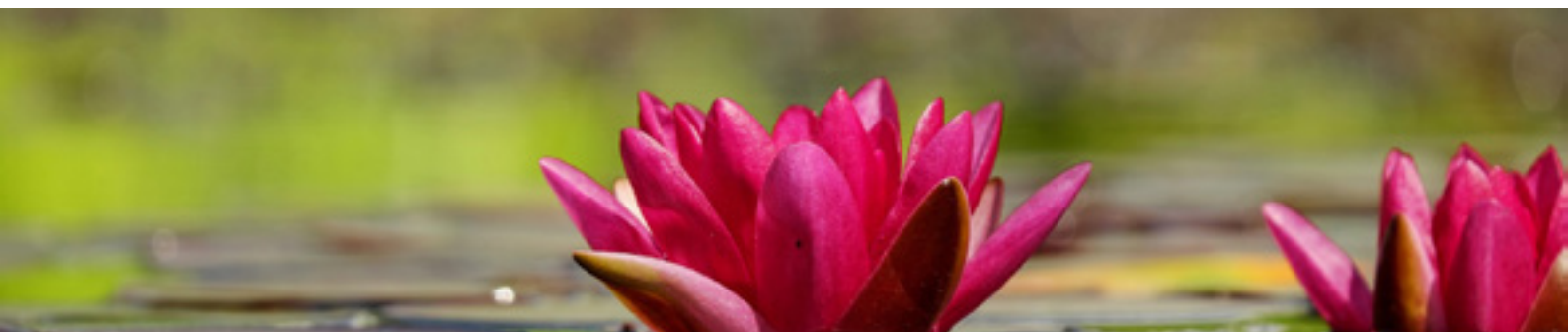
Organometallics

- | | |
|---|---------------------------------|
| • Organotins full suite <i>MBT, DBT, TBT, MPT, DPT, TPT, MOT, DOT, TOT, Tetrabutyltin, Tricyclohexyltin</i> | • Organotins <i>MBT/DBT/TBT</i> |
| | • Tributyl Tin <i>TBT</i> |



Soil and Sediment Microbiology

- E.coli
- Faecal Coliforms
Thermotolerant Coliforms and E.coli
- Total Coliforms
- Pseudomonas aeruginosa
Hydrocarbon Utilising Bacteria
- Salmonella
- Clostridium perfringens
- Iron Precipitating Bacteria
- Sulfate Reducing Bacteria
SRB - Presence / Absence
- Sulfate Reducing Bacteria
(SRB) Semi-quantitative
- Faecal enterococci (F. ent)
- Iron Reducing Bacteria
- Enteric Viruses & Helminth Ova



Soil and Sediment Organics

Volatile Organic Compounds (VOC)

- Formaldehyde + other carbonyls *HPLC*
- Formaldehyde
Colourimetric - Total
- VOC – Unknown
Qualitative Scan
10 major peaks are library matched
- VHC - Volatile Chlorinated
(VCH) / Halogenated Hydrocarbons

BTEX

- MtBE
optional as MBTEX
- Naphthalene
optional as BTEXN
- Benzene
- Toluene
- Ethyl benzene
- m/p-xylene
- o-xylene



Monocyclic Aromatics

- BTEX *as above*
- Styrene *vinyl benzene*
- Isopropylbenzene *cumene*
- n-propyl benzene
- 1,3,5-trimethyl benzene
- tert-butyl benzene
- 1,2,4-trimethyl benzene
- sec-butyl benzene
- 4-isopropyl toluene
- n-butyl benzene

Trihalomethanes (THM)

- Chloroform
trichloromethane
- Bromodichloromethane
- Dibromochloromethane
- Bromoform
tribromomethane

Halogenated Aliphatics

- 1,1,1,2-tetrachloroethane
- 1,1,1-trichloroethane
- 1,1,2,2-tetrachloroethane
- 1,1,2-trichloroethane
- 1,1-dichloroethene
- 1,2-dichloroethane
- cis-1,2-dichloroethene
- trans-1,2-dichloroethene
- Carbon tetrachloride
- Dichloromethane
methylene chloride; DCM
- Hexachlorobutadiene *HCBD*
- Tetrachloroethene
tetrachloroethylene; perchloroethylene; PCE
- Trichloroethene
trichloroethylene; TCE
- Vinyl chloride
chloroethene, chloroethylene
- Dichlorodifluoromethane
Freon CFC-12
- Chloromethane
- Bromomethane *methyl bromide*
- Dibromomethane
- Chloroethane
- Trichlorofluoromethane
Freon CFC-13
- 1,1-dichloroethane
- Bromochloromethane
- 1,2-dibromo-3-chloropropane *DBCP*
- 1,3-dichloropropane
- 1,2,3-trichloropropane
- 1,1-dichloropropene

Halogenated Aromatics

- Chlorobenzene
- Bromobenzene
- 2-chlorotoluene
- 4-chlorotoluene
- 1,2-dichlorobenzene
- 1,3-dichlorobenzene
- 1,4-dichlorobenzene
- 1,2,3-trichlorobenzene
- 1,2,4-trichlorobenzene
- Oxygenated Compounds
Ketones, etc.
- Acetone (2-propanone)
- Acrolein (2-propenal)
- 2-butanone (MEK)
- 2,6-dimethyl-4-heptanone
Diisobutyl ketone, DIBK
- 1,4-Dioxane
- 2-hexanone *MBK*
- 4-methyl-2-pentanone *MIBK*
- 2-nitropropane
- Tetrahydrofuran
- Vinyl acetate



Fumigants

- 2,2-dichloropropane
- 1,2-dichloropropane
- trans-1,3-dichloropropene
- cis-1,3-dichloropropene
- 1,2-dibromoethane
EDB; ethylene dibromide

Fuel Oxygenates Screen

- TAE
tert amyl ethyl ether
- TAME
tert amyl methyl ether
- MtBE
methyl tert butyl ether
- DIPE
diisopropyl ether
- ETBE
ethyl tert butyl ether
- TBA
tert butyl alcohol

Miscellaneous VOCs

- Chloroprene
Neoprene, Rubber
- cis-1,4-Dichloro-2-butene
- 1-Chlorobutane
- Iodomethane
- Naphthalene
- 1,1,2-trichlorotrifluoroethane
Freon CFC-113
- Acrylonitrile
- Allyl Chloride
3-chloroprene
- Carbon disulfide
- Nitrobenzene
- Propionitrile
- Hexane
- trans-1,4-dichloro-2-butene
- Cyclohexane

Solvent Screen

- Benzene
- Toluene
- Ethylbenzene
- m/p xylenes
- o-xylene
- MTBE
- 2-butanone *MEK*
- Carbon Tetrachloride
- Dichloromethane
methylene chloride; DCM
- Tetrachloroethene
tetrachloroethylene; perchloroethylene; PCE
- Trichloroethene
trichloroethylene; TCE
- Carbon Disulphide
- Chloroform
trichloromethane
- Diethyl Ether
- Acrylonitrile
- Methyl Acrylate
- Methyl Methacrylate
- Ethyl Methacrylate
- Methacrylonitrile
- Acetone *2-propanone*
- Tetrahydrofuran
- 4-methyl-2-pentanone
MIBK
- Hexane
- 2-hexanone *MBK*

Brominated VOC

- Vinyl bromide
- Dibromomethane
- Trans-1,2-dibromoethene
- Bromoform
- Tribromoethene
- 1,1,2,2-Tetrabromoethane
- Cis-1,2-dibromoethene
total



Volatile Fatty Acids

- Acetic
- Propanoic
- Iso-butyric
- Butyric
- Iso-valeric
- Valeric
- Iso-caproic
- Caproic
- Heptanoic
- Volatile Fatty Acids
VFAs - Total

Semi-Volatile Organic Compounds (SVOC)

- SVOC - Standard 8270 suite
>100 analytes as default
- SVOC Extended Suite
>200 analytes
- SVOC – Unknown
Qualitative Scan 10 major peaks are library matched
- AFFF Screen
PFOS/ PFOA/6:2FtS
- Aldehydes and Ketones
Carbonyls
- Alcohols *Glycols are a separate analysis, see below*
- AOX *water leachable*
- Coal Tar *note - approximate with high degree of uncertainty*
- Cresol/ Coal Tar Creosotes
PAH & Methyl Phenol Package - by GCMS
- Diuron and Fluometuron
- Explosives
- Glycols *Alcohols are a separate analysis, see above*
- Glyphosate
Roundup & AMPA on request
- Oil and Grease *Gravimetric*
- PFOS/PFOA
- Toxaphene

Phenoxy Acid Herbicides

- Acifluorfen
- 2,4,5-T
- 2,4,5-TP (Silvex)
- 2,4,6-T
- 2,4-D
- 2,4-DB
- 2,6-D
- 3,5-dichlorobenzoic acid
- Bromoxynil
- Clopyralid
- DCPA (chlorthal) diacid
(does not extract in water)
- Dicamba
- Dichlorprop
- Dinoseb
- Ioxynil
- MCPA
- MCPB
- Mecoprop (MCP)
- o-chlorophenoxy acetic acid
- 4-CPA (p-chlorophenoxy acetic acid)
- Picloram
- Triclopyr
- Bentazon
- Chloramben
- Fluroxypyr
- Dalapon (2,2-DPA)



Triazine Herbicides

- | | | |
|--------------|--------------|-----------------|
| • Atrazine | • Irgarol | • Simazine |
| • Ametryn | • Metribuzin | • Terbutylazine |
| • Cyanazine | • Propazine | • Terbutryn |
| • Hexazinone | • Prometryn | |

Phenyl Ureas / Carbamate / Thiocarbamate Herbicides

- | | | |
|---------------|----------------|----------------------------------|
| • Methomyl | • Fenuron | • Diuron |
| • Aldicarb | • Carbaryl | • Linuron |
| • Propoxur | • Methiocarb | • Siduron |
| • Carbofuran | • Tebuthiuron | • Thiobencarb <i>benthiocarb</i> |
| • Mexacarbate | • Chlorpropham | • Neburon |
| • Propham | • Monuron | • Molinate |
| • Oxamyl | • SWEP | • Vernolate |
| • Fluometuron | • Isoproturon | • Pebulate |

Organochlorine Pesticides (OCP)

- | | | |
|--|--------------------------------------|-----------------------|
| • HCB | • alpha-chlordane | • Endrin Ketone |
| • alpha-BHC <i>a-BHC</i> | • <i>a-chlordane, cis- chlordane</i> | • Endosulfan Sulphate |
| • gamma-BHC <i>lindane</i> | • Endosulfan I <i>a-endosulfan</i> | • Methoxychlor |
| • beta-BHC <i>b-BHC</i> | • p,p'-DDE | • isodrin |
| • Heptachlor | • Dieldrin | • o,p'-DDE |
| • delta-BHC <i>d-BHC</i> | • Endrin | • o,p'-DDD |
| • Aldrin | • p,p'-DDD | • o,p'-DDT |
| • Heptachlor Epoxide | • Endosulfan II <i>b-endosulfan</i> | • Mirex |
| • gamma-Chlordane | • p,p'-DDT | • trans-nonachlor |
| • <i>g-chlordane, trans- chlordane</i> | • Endrin aldehyde | |



Organophosphate Pesticides (OPP)

- Azinphos methyl *guthion*
- Bromophos Ethyl
- Chlorpyrifos *chlorpyrifos ethyl*
- Chlorpyrifos-methyl
- Coumaphos *Co-Ral*
- Diazinon *dimpylate*
- Dichlorvos
- Dimethoate
- Disulfoton
- Ethion
- Fenamiphos *phenamiphos*
- Fenitrothion
- Fenthion
- Malathion *maldison*
- Methidathion
- Mevinphos
- Parathion *parathion-ethyl*
- Parathion-methyl
- Phorate
- Phosalone
- Ronnel *fenchlorphos*
- Carbophenothion
- cis-Clorfenvinphos
- Demeton-S-methyl
- EPN
- Ethoprophos *ethoprop*
- Fensulfothion
- Monocrotophos
- Naled *dibrom*
- Phosmet
- Pirimiphos-ethyl
- Pirimiphos-methyl
- Prothiophos *tokuthion*
- Sulprofos *bolstar*
- Tetrachlorvinphos *stirophos*
- trans-Clorfenvinphos

Polycyclic Aromatic Hydrocarbons (PAH)

- Naphthalene
- Acenaphthylene
- Acenaphthene
- Fluorene
- Phenanthrene
- Anthracene
- Fluoranthene
- Pyrene
- Benzo (a) anthracene
- Chrysene
- Benzo (b,j & k) fluoranthene
- Benzo (a) pyrene
- Indeno (1,2,3-c,d) pyrene
- Dibenzo (a,h) anthracene
- Benzo(g,h,i) perylene
- 2-methyl naphthalene
- 3-methylcholanthrene
- Benzo (e) pyrene
- Perylene
- Coronene

Total Phenolics (as Phenol) - Speciated Phenols

- Phenol
- 2-Chlorophenol
- 4-Chloro-3-Methylphenol
- 2-Methylphenol *o-cresol*
- 3/4-Methylphenol *m/p-cresol*
- 2-Nitrophenol
- 2,4-Dimethylphenol
- 2,4-Dichlorophenol
- 2,6-dichlorophenol
- 2,4,5-trichlorophenol
- 2,4,6-trichlorophenol
- 2,4-dinitrophenol
- 4-nitrophenol
- 2,3,4,6-tetrachlorophenol
- 2-methyl-4,6-dinitrophenol
- pentachlorophenol
- Extra Vic EPA Phenols
- 2,3,4,5 & 2,3,5,6-tetrachlorophenol
- 2-cyclohexyl-4,6-dinitrophenol (dinex)
- dinoseb



Polychlorinated Biphenyls (PCB)

- Aroclor 1016
- Aroclor 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260
- PCB Congener 28
- PCB Congener 52
- PCB Congener 101
- PCB Congener 118
- PCB Congener 138
- PCB Congener 153
- PCB Congener 180

PFAS

- Perfluorobutane sulfonic acid
- Perfluorohexane sulfonic acid
- Perfluorooctane sulfonic acid
- Perfluorodecane sulfonic acid
- Perfluorobutanoic acid
- Perfluorohexanoic acid
- Perfluoroheptanoic acid
- Perfluorooctanoic acid
- Perfluorononanoic acid
- Perfluorodecanoic acid
- Perfluoroundecanoic acid
- Perfluorododecanoic acid
- Perfluorotridecanoic acid
- Perfluorotetradecanoic acid
- 4:2 Fluorotelomer sulfonic acid
- 6:2 Fluorotelomer sulfonic acid
- 8:2 Fluorotelomer sulfonic acid
- Perfluorooctane sulfonamide
- N-Methyl perfluorooctane sulfonamide
- N-Ethyl perfluorooctane sulfonamide
- N-methyl perfluorooctane sulfonamidoethanol
- N-Ethyl perfluorooctane sulfonamidoethanol

Phthalates

- Diethyl phthalate **DEP**
- Dimethyl phthalate **DMP**
- di-n-butyl phthalate **DBP**
- di-n-octyl phthalate **DOP**
- Bis(2-ethylhexyl)phthalate **di-(2-ethylhexylphthalate) (DEHP)**
- Butyl Benzyl phthalate **BBP**
- On request only: Bis(2-ethylhexyl)adipate (di-(2-ethylhexyladipate)) **DEHA**

Semi-volatile chlorinated hydrocarbons (SVCH)

- 1,2,4,5-Tetrachlorobenzene
- 1,2,4-Trichlorobenzene
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Hexachlorobenzene
- Hexachlorobutadiene
- Hexachlorocyclopentadiene
- Hexachloroethane
- Hexachloropropene
- Pentachlorobenzene
- Pentachloroethane
- 1,2,3,4-Tetrachlorobenzene
- 1,2,3,5-Tetrachlorobenzene
- 1,2,3-Trichlorobenzene
- 1,3,5-Trichlorobenzene



Synthetic Pyrethroids

- Bifenthrin
- Lambda-Cyhalothrin
- Cyfluthrin
- Cypermethrin
- Deltamethrin
- Esfenvalerate
- cis-permethrin
- trans-permethrin

Triazole Fungicides

- Propiconazole Isomer A
- Propiconazole Isomer A
- Tebuconazole

Anilines and Amines

- 1-Naphthylamine
- 2-Naphthylamine
- 2-Nitroaniline
- 3-Nitroaniline
- 4-Chloroaniline
- 4-Nitroaniline
- Aniline
- Dibenzofuran

Haloethers

- Bis(2-chloroethoxy)methane
- Bis(2-chloroethyl)ether
- Bis(2-chloroisopropyl)ether
- 4-bromophenyl phenyl ether
- 4-chlorophenyl phenyl ether

Nitrosamines

- Diphenylamine
- 4-Aminobiphenyl
- N-Nitrosodi-n-butylamine **NDBA**
- N-Nitrosodi-n-propylamine **NDPA**
- N-Nitrosomorpholine **NMOR**
- N-Nitrosopiperidine **NPIP**
- N-Nitrosodiethylamine **NDEA**
N-ethyl-N-nitroso-ethanamine
- N-Nitrosomethyl-ethylamine
- N-Nitrosopyrrolidine (NPYR)

Nitroaromatics and Ketones

- 1,3-Dinitrobenzene *meta*
- 2,6-Dinitrotoluene
- 5-Nitro-o-toluidine
- Acetophenone
- Azobenzene
- Isophorone
- Nitrobenzene
- Pentachloronitrobenzene
- Phenacetin
- 2,4-Dinitrotoluene
- p-(Dimethylamino) azobenzene

Carbamates (Herbicides)

- Carbofuran
- Carbaryl
- Molinate



Sulfonyl Ureas Herbicides

- Metsulfuron Methyl
- Chlorsulfuron

Miscellaneous SVOC

- 1,3,5-trinitrobenzene
- Bromacil
- Demeton-O
- Demeton-S
- Dicofol
- Dinex
- 2-cyclo-4,6- dinitrophenol
- N-Nitroquinoline-N-oxide
- o-Toluidine
- Oxychlordan
- Temephos **Abate**
- Benzyl alcohol
- Carbazole
- Ethyl methanesulfonate
- Isosafrole Isomer 1
- Isosafrole Isomer 2
- Methapyrilene
- Safrole
- p-dimethylamino azobenzene
- Methyl methanesulfonate
- Alachlor
- Metolachlor
- e-caprolactam
- Trifluralin
- Cyclohexanone
- 2-picoline

Leaches

- TCLP - MEP
- Multiple Extraction Procedure
- TCLP
- TCLP - SPLP
- Elutriate
- ASLP

Leaf

- USEPA 1313 Extraction
- Parallel Leach
- USEPA 1314 Extraction
- Column Leach
- USEPA 1315 Extraction
- Monolith Leach
- USEPA 1316 Extraction
- Parallel Leach

Illicit drugs and precursors

- Ephedrine
- Pseudoephedrine
- Amphetamine
- Methamphetamine
- MDA
- MDMA



Water

Water Testing

Asbestos

- Fibre count in water
- Fibre confirmation by SEM

Inorganics and Metals - Physical parameters

- pH
- Electrical Conductivity *EC*
- Biochemical Oxygen Demand *BOD*
- Colour *True or Apparent*
- Carbonaceous Biochemical Oxygen Demand *CBOD*
- Chemical Oxygen Demand *COD*
- Dissolved Oxygen
- Turbidity
- Salinity
- Resistivity
- Specific Gravity

Solids

- Total Solids
- Total Suspended Solids *TSS*
- Total Dissolved Solids *TDS*
- Total Settleable Solids
- Total Volatile Suspended Solids *TVSS*

Alkalinity & Acidity

- Acidity
- Alkalinity Suite
CO₃, HCO₃, OH, Total Alkalinity
- Total Alkalinity
- Carbon Dioxide
CO₂ - Free (Dissolved)
- Carbon Dioxide
CO₂ - Total
- Hydroxide
- Carbonate
- Bicarbonate

Anions & Cations

- Anions – Major
Cl, SO₄, Alkalinity
- Anions – Minor
NO₂, NO₃, F, PO₄
- Bromine and/or Iodine *Total*
- Sodium Absorption Ratio
SAR
- Cations - Ca, K, Mg, Na
- Ionic Balance
- Bromide
- Chloride
- Fluoride
- Hardness - Ca or Mg Iodide
- Sulphate
- Sulphide
- Sulphite
- Thiosulphate



Cyanides

- Amenable Cyanide
Amenable to Chlorination (labile)
- Total Cyanide
- Weak Acid Dissociable
WAD Cyanide
- Free Cyanide Thiocyanate
SCN

Nutrients

- Ammonia (NH₃) as N
- Nitrate (NO₃) as N Nitrite (NO₂) as N
- NO_x as N *NO₂ + NO₃*
- Total Kjeldahl Nitrogen *TKN*
- Total Nitrogen
- Organic Nitrogen
- Inorganic Nitrogen
- Phosphate (PO₄) as P
- Total Phosphorus

Metals

- Aluminium
- Antimony
- Arsenic
- Barium
- Beryllium
- Bismuth
- Boron
- Cadmium
- Caesium
- Cerium
- Chromium
- Cobalt
- Copper
- Dysprosium
- Erbium
- Europium
- Gadolinium
- Gallium
- Germanium
- Gold
- Hafnium
- Holmium
- Indium
- Iridium
- Iron
- Lanthanum
- Lead
- Lithium
- Lutetium
- Manganese
- Mercury
- Molybdenum
- Neodymium
- Nickel
- Niobium
- Osmium
- Palladium
- Phosphorus
- Platinum
- Praseodymium
- Particle Size Distribution
Sieving only 75mm - 75µm
- Particle Size Distribution
Hydrometer only 75- 20µm, <20-2µm, <2µm - Clay fraction
- Particle Size Distribution
Sieving and Hydrometer (as above)
- RTA - Sieving
proportion retained on sieves 0.475, 9.5 & 26.5mm
- Sulphur forms
- Acid Volatile Sulphur *AVS*
- SEM *Simultaneous Extractable Metals*
- Sulphate
SO₄ – water soluble
- Sulphide *Pres/Abs*
- Sulphide - Total
NEPM, B3 section 9.4 - acid soluble and insoluble
- TOS
Total Oxidisable Sulfur
- Miscellaneous
- MBAS
Surfactants water soluble
- Oxidant Demand
(NOD/ SOD) includes residual persulfate over 1-4 time periods with buffer capacity
- Sugar in soil/ concrete



Specialty Metals

- Silica *determined as Silicon (acid soluble)*
- Silica - Reactive *dissolved silica*
- Arsenic - Speciated
- Chelex *Bioavailable (Labile) Metals*
- Ferrous Iron **Fe²⁺**
- Hexavalent Chromium **Cr VI**

Cations

- Cations **Ca, K, Mg, Na**

Organometallics

- Organotins Full Suite **DBT/TBT/MBT, MPT, DPT, TPT, MOT, DOT, TOT, TeBT, Tricyclohexyltin**
- Organotins **DBT/TBT/MBT**
- Tributyl Tin **TBT**
- Methyl Mercury

Microbiology

- Algae - Total Algal ID and Enumeration **Freshwater**
- Algae - Blue Green ID and Enumeration **Freshwater**
- Algae - Species Identification **Water or Scum sample**
- Amoeba **Including Naegleria speciation - if required**
- Acanthamoebae **35°C**
- Bacteria
- F. Enterococcus
- Total Plate Count
- Heterotrophic Plate Count **HPC**
- Anaerobic Heterotrophic Plate Count
- Total Coliforms
- E. coli
- Faecal Coliforms
- Thermotolerant coliforms
- Faecal Enterococci **F Ent**
- Legionella
- Clostridium perfringens
- Pseudomonas aeruginosa **Hydrocarbon Utilising Bacteria**
- Sulphite Reducing Clostridia
- Salmonella
- Iron Related Bacteria **semi-quantitative**
- Sulphate Reducing Bacteria **semi-quantitative**
- Acid Producing Bacteria **semi-quantitative**
- Denitrifying Bacteria **semi-quantitative**

Miscellaneous

- Chlorine **Free**
- Chlorine **Total**
- Chlorophyll-A
- Langelier Saturation Index
- MBAS **Surfactants**
- Odour
- Dissolved Organic Carbon **DOC**
- Total Organic Carbon **TOC**
- Sugar
- Tannins & Lignins
- Total Carbon (TC)
- Total Inorganic Carbon (TIC)
- Oxyanions **Chlorite, Chlorate, Bromate**



Water Organics

Disinfection By-products

- HAAs
MCA, DCA and TCA
- Speciated Phenols
ADWG Low Level
- Trichloroacetaldehyde
chloral hydrate

Dissolved Gases

- Acetylene
- Butane
- Ethane
- Ethene
- Methane
- Propane

Total Recoverable Hydrocarbons (TRH)

- vTRH
C6-C9
- TRH - Semi-volatile
C10-C36
- sTRH
C10-C36 with silica gel clean-up

TRH NEPM

- TRH NEPM
C6-C10
Note F1='C6-C10' less BTEX
>C10-C16
note F2= >C10-C16' less
Naphthalene
>C16-C34
>C34-C40
- TRH
Product ID
comparison with
in-house library
- sTRH HRAF Aliphatic/
Aromatic Speciation
C10-C15 Aliphatic & Aromatic,
C16-C35 Aliphatic & Aromatic &
>C35 Aliphatic
- vTRH CWG Aliphatic/
Aromatic Speciation
Aliphatic C5-C6,
>C6-C8, >C8-C10 and
Aromatic C5-C7,
>C7-C9, >C9-C10
- TRH Chromatogram Supply
- sTRH CWG Aliphatic/
Aromatic Speciation
C10-C12 Aliphatic & Aromatic,
C12-C16 Aliphatic & Aromatic,
C16-C21 Aromatic, C16-C35
Aliphatic & C21-C35 Aromatic

Volatile Organic Compounds (VOC)

- VHC - Volatile Chlorinated
(VCH) / Halogenated
Hydrocarbons
- Formaldehyde + other
- carbonyls *HPLC*
- Formaldehyde
Colourimetric - Total
- Vinyl Chloride
- VOC
Unknown Qualitative Scan
10 major peaks are library
matched



BTEX

- | | | |
|-----------------|--------------------------|--------------------------|
| • Benzene | • o-xylene | • m/p-xylene |
| • Toluene | • MtBE | • Naphthalene |
| • Ethyl benzene | <i>optional as MBTEX</i> | <i>optional as BTEXN</i> |

Monocyclic Aromatics

- | | | |
|----------------------------------|---------------------------|-----------------------|
| • BTEX <i>as above</i> | • 1,3,5-trimethyl benzene | • 4-isopropyl toluene |
| • Styrene <i>vinyl benzene</i> | • tert-butyl benzene | • n-butyl benzene |
| • Isopropylbenzene <i>cumene</i> | • 1,2,4-trimethyl benzene | |
| • n-propyl benzene | • sec-butyl benzene | |

Trihalomethanes (THM)

- | | | |
|------------------------|-------------------------|------------------------|
| • Bromodichloromethane | • Chloroform | • Bromoform |
| • Dibromochloromethane | <i>trichloromethane</i> | <i>tribromomethane</i> |

Halogenated Aliphatics

- | | | |
|--------------------------------|--|---|
| • 1,1,1,2-tetrachloroethane | • Hexachlorobutadiene <i>HCBD</i> | • Dibromomethane |
| • 1,1,1-trichloroethane | • Tetrachloroethene | • Chloroethane |
| • 1,1,2,2-tetrachloroethane | <i>tetrachloroethylene, perchloroethylene, PCE</i> | • Trichlorofluoromethane |
| • 1,1,2-trichloroethane | • Trichloroethene | <i>Freon CFC-13</i> |
| • 1,1-dichloroethene | <i>trichloroethylene, TCE</i> | • 1,1-dichloroethane |
| • 1,2-dichloroethane | • Vinyl chloride | • Bromochloromethane |
| • cis-1,2-dichloroethene | <i>chloroethene, chloroethylene</i> | • 1,2-dibromo-3-chloropropane <i>DBCP</i> |
| • trans-1,2-dichloroethene | • Dichlorodifluoromethane | • 1,3-dichloropropane |
| • Carbon tetrachloride | <i>Freon CFC-12</i> | • 1,2,3-trichloropropane |
| • Dichloromethane | • Chloromethane | • 1,1-dichloropropene |
| <i>methylene chloride; DCM</i> | • Bromomethane | |
| | <i>methyl bromide</i> | |



Fumigants

- 2,2-dichloropropane
- 1,2-dichloropropane
- trans-1,3-dichloropropene
- cis-1,3-dichloropropene
- 1,2-dibromoethane
EDB, ethylene dibromide

Halogenated Aromatics

- Chlorobenzene
- Bromobenzene
- 2-chlorotoluene
- 4-chlorotoluene
- 1,2-dichlorobenzene
- 1,3-dichlorobenzene
- 1,4-dichlorobenzene
- 1,2,3-trichlorobenzene
- 1,2,4-trichlorobenzene

Oxygenated Compounds (Ketones etc)

- Acetone *2-propanone*
- Acrolein *2-propenal*
- 2-butanone *MEK*
- 1,4-Dioxane
- 2,6-dimethyl-4-heptanone
Diisobutyl ketone, DIBK
- 2-hexanone *MBK*
- 4-methyl-2-pentanone *MIBK*
- 2-nitropropane
- Tetrahydrofuran
- Vinyl acetate

Fuel Oxygenates Screen

- TAAE *tert amyl ethyl ether*
- TAME *tert amyl methyl ether*
- MtBE *methyl tert butyl ether*
- DIPE *diisopropyl ether*
- ETBE *ethyl tert butyl ether*
- TBA *tert butyl alcohol*

Miscellaneous VOCs

- 1,1,2-trichlorotrifluoroethane
Freon CFC-113
- Acrylonitrile
- Allyl Chloride *3-chloroprene*
- Carbon disulfide
- cis-1,4-Dichloro-2-butene
- Chloroprene
Neoprene, Rubber
- 1-Chlorobutane
- Iodomethane
- Naphthalene
- Nitrobenzene
- Propionitrile
- Hexane
- trans-1,4-dichloro-2-butene
- Cyclohexane



Solvent Screen

- Benzene
- Toluene
- Ethylbenzene
- m/p xylenes
- o-xylene
- MTBE
- Dichloromethane
methylene chloride; DCM
- Tetrachloroethene
tetrachloroethylene, perchloroethylene, PCE
- 2-butanone *MEK*
- Carbon Tetrachloride
- Trichloroethene
trichloroethylene, TCE
- Carbon Disulphide
- Chloroform
trichloromethane
- Diethyl Ether
- Acrylonitrile
- Methyl Acrylate
- Methyl Methacrylate
- Ethyl Methacrylate
- Methacrylonitrile
- Acetone
2-propanone
- Tetrahydrofuran
- 4-methyl-2-pentanone
MIBK
- Hexane
- 2-hexanone *MBK*

Brominated VOC

- Vinyl bromide
- Dibromomethane
- Trans-1,2-dibromoethene
- Cis-1,2-dibromoethene *total*
- Bromoform
- Tribromoethene
- 1,1,2,2-Tetrabromoethane

Volatile Fatty Acids

- Volatile Fatty Acids
VFAs - Total
- Acetic
- Propanoic
- Iso-butyric
- Butyric
- Iso-valeric
- Valeric
- Iso-caproic
- Caproic
- Heptanoic



Water

Semi-Volatile Organic Compounds

SVOC

- SVOC - Standard 8270 suite
>100 analytes as default
- SVOC Extended Suite
>200 analytes
- SVOC – Unknown Qualitative Scan
10 major peaks are library matched
- AFFF Screen
PFOS/ PFOA/6:2FtS
- Aldehydes and Ketones
Carbonyls
- Alcohols
- Glycols are separate analysis, see below*
- AOX *water leachable*
- Coal Tar
note - approximate with high degree of uncertainty
- Cresol/ Coal Tar Creosotes
PAH & Methyl Phenol Package - by GCMS
- Diquat and Paraquat
- Diuron and Fluometuron
- Explosives
- EDTA and NTA
- Glutaraldehyde
- Glycols
Alcohols are separate analysis, see above
- Glyphosate
Roundup & AMPA on request
- Oil and Grease
- PFOS/PFOA
- Toxaphene
- Trenbolone *Steroid*

Phenoxy Acid Herbicides

- Acifluorfen
- 2,4,5-T
- 2,4,5-TP *Silvex*
- 2,4,6-T
- 2,4-D
- 2,4-DB
- 2,6-D
- 3,5-dichlorobenzoic acid
- Bromoxynil
- Clopyralid
- DCPA
chlorthal diacid - does not extract in water
- Dicamba
- Dichlorprop
- Dinoseb
- Ioxynil
- MCPA
- MCPB
- Mecoprop *MCPP*
- o-chlorophenoxy acetic acid
- 4-CPA
p-chlorophenoxy acetic acid
- Picloram
- Triclopyr
- Bentazon
- Chloramben
- Fluroxypyr
- Dalapon *2,2-DPA*

Carbamates (Herbicides)

- Carbofuran
- Carbaryl
- Molinate

Triazine Herbicides

- Atrazine
- Ametryn
- Cyanazine
- Hexazinone
- Irgarol
- Metribuzin
- Propazine
- Prometryn
- Simazine
- Terbutylazine
- Terbutryn



Sulfonyl Ureas Herbicides

- Metsulfuron Methyl
- Chlorsulfuron

Phenyl Ureas / Carbamate / Thiocarbamate Herbicides

- Methomyl
- Aldicarb
- Propoxur
- Carbofuran
- Mexacarbate
- Propham
- Oxamyl
- Fluometuron
- Fenuron
- Carbaryl
- Methiocarb
- Tebuthiuron
- Chlorpropham
- Monuron
- SWEP
- Isoproturon
- Diuron
- Linuron
- Siduron
- Thiobencarb *benthiocarb*
- Neburon
- Molinate
- Vernolate
- Pebulate

Organophosphate Pesticides (OPP)

- Azinphos methyl *guthion*
- Bromophos Ethyl
- Chlorpyrifos *chlorpyrifos ethyl*
- Chlorpyrifos-methyl
- Coumaphos *Co-Ral*
- Diazinon *dimpylate*
- Dichlorvos
- Dimethoate
- Disulfoton
- Ethion
- Fenamiphos *phenamiphos*
- Fenitrothion
- Fenthion
- Malathion *maldison*
- Methidathion
- Mevinphos
- Parathion *parathion-ethyl*
- Parathion-methyl
- Phorate
- Phosalone
- Ronnel *fenchlorphos*
- Carbophenothion
- cis-Clorfenvinphos
- Demeton-S-methyl
- EPN
- Ethoprophos *ethoprop*
- Fensulfothion
- Monocrotophos
- Naled *dibrom*
- Phosmet
- Pirimiphos-ethyl
- Pirimiphos-methyl
- Prothiophos *tokuthion*
- Sulprofos *bolstar*
- Tetrachlorvinphos *stirophos*
- trans-Clorfenvinphos

Organochlorine Pesticides (OCP)

- HCB
- alpha-BHC *a-BHC*
- gamma-BHC *lindane*
- beta-BHC *b-BHC*
- Heptachlor
- delta-BHC *d-BHC*
- Aldrin
- Heptachlor Epoxide
- gamma-Chlordane *g-chlordane, trans-chlordane*
- alpha-chlordane *a-chlordane, cis-chordane*
- Endosulfan I *a-endosulfan*
- p,p'-DDE
- Dieldrin
- Endrin
- p,p'-DDD
- Endosulfan II *b-endosulfan*
- p,p'-DDT
- Endrin aldehyde
- Endrin Ketone
- Endosulfan Sulphate
- Methoxychlor
- isodrin
- o,p'-DDE
- o,p'-DDD
- o,p'-DDT
- Mirex
- trans-nonachlor



Polycyclic Aromatic Hydrocarbons (PAH)

- Naphthalene
- Acenaphthylene
- Acenaphthene
- Fluorene
- Phenanthrene
- Anthracene
- Fluoranthene
- Pyrene
- Benzo (a) anthracene
- Chrysene
- Benzo (b,j & k) fluoranthene
- Benzo (a) pyrene
- Indeno (1,2,3-c,d) pyrene
- Dibenzo (a,h) anthracene
- Benzo(g,h,i) perylene
- 2-methyl naphthalene
- 3-methylcholanthrene
- Benzo (e) pyrene
- Perylene
- Coronene

Polychlorinated Biphenyls (PCB)

- Aroclor 1016
- Aroclor 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260
- PCB Congener 28
- PCB Congener 52
- PCB Congener 101
- PCB Congener 118
- PCB Congener 138
- PCB Congener 153
- PCB Congener 180

PFAS

- Perfluorobutane sulfonic acid
- Perfluorohexane sulfonic acid
- Perfluorooctane sulfonic acid
- Perfluorodecane sulfonic acid
- Perfluorobutanoic acid
- Perfluorohexanoic acid
- Perfluoroheptanoic acid
- Perfluorooctanoic acid
- Perfluorononanoic acid
- Perfluorodecanoic acid
- Perfluoroundecanoic acid
- Perfluorododecanoic acid
- Perfluorotridecanoic acid
- Perfluorotetradecanoic acid
- 4:2 Fluorotelomer sulfonic acid
- 6:2 Fluorotelomer sulfonic acid
- 8:2 Fluorotelomer sulfonic acid
- Perfluorooctane sulfonamide
- N-Methyl perfluorooctane sulfonamide
- N-Ethyl perfluorooctane sulfonamide
- N-methyl perfluorooctane sulfonamidoethanol
- N-Ethyl perfluorooctane sulfonamidoethanol
- Total Oxidisable Precursor Assay



Water Total Phenolics as Phenol

Speciated Phenols

- Phenol
- 2-Chlorophenol
- 4-Chloro-3-Methylphenol
- 2-Methylphenol *o-cresol*
- 3/4-Methylphenol *m/p-cresol*
- 2-Nitrophenol
- 2,4-Dimethylphenol
- 2,4-Dichlorophenol
- 2,6-dichlorophenol
- 2,4,5-trichlorophenol
- 2,4,6-trichlorophenol
- 2,4-dinitrophenol
- 4-nitrophenol
- 2,3,4,6 -tetrachlorophenol
- 2-methyl-4,6-dinitrophenol
- pentachlorophenol

Extra Vic EPA Phenols

- 2,3,4,5 & 2,3,5,6 - tetrachlorophenol
- 2-cyclohexyl-4, 6-dinitrophenol *dinex*
- dinoseb

Phthalates

- Bis(2-ethylhexyl) phthalate (di-(2- ethylhexylphthalate)) *DEHP*
- Diethyl phthalate *DEP*
- Dimethyl phthalate *DMP*
- di-n-butyl phthalate *DBP*
- di-n-octyl phthalate *DOP*
- ON REQUEST ONLY:**
- Bis(2-ethylhexyl)adipate (di-(2-ethylhexyladipate)) *DEHA*

Semi-volatile chlorinated hydrocarbons (SVCH)

- 1,2,4,5-Tetrachlorobenzene
- 1,2,4-Trichlorobenzene
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Hexachlorobenzene
- Hexachlorobutadiene
- Hexachlorocyclopentadiene
- Hexachloroethane
- Hexachloropropene
- Pentachlorobenzene
- Pentachloroethane
- 1,2,3,4-Tetrachlorobenzene
- 1,2,3,5-Tetrachlorobenzene
- 1,2,3-Trichlorobenzene
- 1,3,5-Trichlorobenzene

Synthetic Pyrethroids

- Bifenthrin
- Lambda-Cyhalothrin
- Cyfluthrin
- Cypermethrin
- Deltamethrin
- Esfenvalerate
- cis-permethrin
- trans-permethrin



Triazole Fungicides

- Propiconazole Isomer A
- Propiconazole Isomer A
- Tebuconazole

Anilines and Amines

- 1-Naphthylamine
- 2-Naphthylamine
- 2-Nitroaniline
- 3-Nitroaniline
- 4-Chloroaniline
- 4-Nitroaniline
- Aniline
- Dibenzofuran

Haloethers

- Bis(2-chloroethoxy) methane
- Bis(2-chloroisopropyl) ether
- 4-chlorophenyl phenyl ether
- Bis(2-chloroethyl) ether
- 4-bromophenyl phenyl ether

Nitrosamines

- Diphenylamine
- N-Nitrosodi-n-butylamine **NDBA**
- N-Nitrosodi-n-propylamine **NDPA**
- N-Nitrosomorpholine **NMOR**
- N-Nitrosopiperidine **NPIP**
- 4-Aminobiphenyl
- N-Nitrosomethyl-ethylamine
- N-Nitrosodiethylamine **NDEA**
N-ethyl-N-nitroso-ethanamine
- N-Nitrosopyrrolidine **NPYR**

Nitroaromatics and Ketones

- 1,3-Dinitrobenzene **meta**
- 2,6-Dinitrotoluene
- 5-Nitro-o-toluidine
- Acetophenone
- Azobenzene
- Isophorone
- Nitrobenzene
- Pentachloronitro benzene
- Phenacetin
- 2,4-Dinitrotoluene
- p-Dimethylamino azobenzene

Miscellaneous SVOC

- 1,3,5-trinitrobenzene
- Bromacil
- Demeton-O
- Demeton-S
- Dicofol
- Dinex **2-cyclo-4,6-dinitrophenol**
- N-Nitroquinoline-N-oxide
- o-Toluidine
- Oxychlordan
- Temephos (Abate)
- Benzyl alcohol
- Carbazole
- Ethyl methanesulfonate
- Isosafrole Isomer 1
- Isosafrole Isomer 2
- Methapyrilene
- p-dimethylaminoazobenzene
- Safrole
- Methyl methanesulfonate
- Alachlor
- Metolachlor
- e-caprolactam
- Trifluralin
- Cyclohexanone
- 2-picoline



Illicit drugs and precursors

- Ephedrine
- Pseudoephedrine
- Amphetamine
- Methamphetamine
- MDA
- MDMA

Radiological

- Radiation
Gross Alpha and Beta
K also required for correction
- Radionuclides
Ra 226 and/or 228



Work Health Testing Asbestos

Asbestos Counting

- Asbestos or SMF
Airborne fibres
- Fibre Confirmation by
SEM - Filters
- Volume Measurement
Training and Equipment
Checks as per NATA
Requirements

Asbestos Identification

- Asbestos ID - Soil or Dust
- Asbestos ID - Clay Soil
WA Dept of Health Guidelines
- Asbestos ID - Sandy Soil
WA Dept of Health Guidelines
- Asbestos ID - Brake pads
Testing is destructive
- Asbestos ID - Clutch plates
Testing is destructive
- Asbestos ID - Bulk materials
- Asbestos ID - Tape
- Asbestos ID - Swab
- Fibre Confirmation by
SEM - Bulk samples



Work Health Testing Dusts / Particulates

DPM

- Diesel Particulate Matter
DPM - Elemental carbon only
- Diesel Particulates
DPM - Elemental carbon and Total carbon
- Diesel Particulates
DPM - Elemental carbon, Organic carbon and Total carbon

Dust

- Inhalable Dust
- Total Welding Fume
- Respirable Dust
- Respirable Dust and Quartz
alpha quartz, silica
- Respirable Quartz or Cristobalite *latter non-NATA*
- Respirable Quartz and Cristobalite *latter non-NATA*
- Combustible Dust - *Respirable/inhalable Oil Mists, Wood Dusts*
- Oil Mist, Mineral
as per NIOSH 5026

Dust Deposition

- Dust Deposition Gauges
- 5 fractions
Insoluble + soluble + combustible + ash + total
- Dust Deposition Gauges
- 3 fractions
Insoluble + soluble + total
- Dust Deposition Gauges
Total Solids only
- Total Suspended Particles
TSP/HVAS/LVAS
- Supply of Filter - Glass Fibre
- Alternatively - Supply of filter
PVC (if required)
- Pre-weigh & label
- Post-weigh + report
- Supply of Filter - Teflon *PTFE*
- Total *including supply of Glass Fibre filter*
- Pre-weigh & label
- Post-weigh & report
- Total
including supply of PTFE filter



Work Health Testing Inorganics

Acid Mists

- Bromide *HBr*
- Chloride *HCl*
- Sulphate *H2SO4*
- Fluoride *HF*
- Nitrate *HNO3*
- Phosphate *H3PO4*
- Ammonia

Ammonia

- Ammonium Sulphate (dust)
Calculated from Ammonium
- Ammonia *NH3 as N*

Anions - Swab Analysis

- Bromide
- Chloride
- Fluoride
- Iodide
- Sulphate
- Nitrate
- Phosphate

Cyanide

- Cyanide Free - HCN *form*
- Cyanide Particulate *form*

Fluoride

- Fluorides - Particulate
- Fluorides - Vapour form (HF)

Hydrogen Sulphide (H2S)

- Hydrogen Sulphide *H2S*

Iodine

- Iodine in Air
- Iodine in Swabs

Metalworking Fluids (MWF)

- Metalworking Fluids *MWF*



Sulphur Dioxide (SO₂)

- Sulphur Dioxide **SO₂** + Sulphuric Acid **H₂SO₄**
- Sulphur Dioxide **SO₂**

Trimellitic Anhydride

- Trimellitic Anydride



Work Health Testing Metals

Arsine / Arsenic Speciation

- Arsenic speciation in urine
As III, As V Organic As
- Arsine in air **AsH₃**

Hexavalent Chromium

- Hexavalent Chromium **Cr VI** in air - OSHA
- Hexavalent Chromium **Cr VI** in air - NIOSH
- Hexavalent Chromium **Cr VI** on wipes

Metal Compounds

- Metal oxides
- Metal silicates

Organometallic Compounds

- Organotinins
dibutyltin, diphenyltin, dioctltin, monobutyltin, monophenyltin, monooctyltin, tetrabutyltin, tributyltin, tricyclohexyltin
- Methyl Mercury
- Trimethyl lead



Metals (Filters, Wipes, Paint)

Aluminium - Al	Lithium - Li	Strontium - Sr
Antimony - Sb	Magnesium - Mg	Sulphur - S
Arsenic - As	Manganese - Mn	Tantalum - Ta
Barium - Ba	Mercury - Hg	Thallium - Tl
Beryllium - Be	particulate only	Thorium - Th
Boron - B	Mercury - Hg vapour	Tin - Sn
Cadmium - Cd	Molybdenum - Mo	Titanium - Ti
Calcium - Ca	Nickel - Ni	Tungsten - W
Chromium - Cr	Phosphorous - P	Uranium - U
Cobalt - Co	Potassium - K	Vanadium - V
Copper - Cu	Selenium - Se	Zinc - Zn
Gold - Au	Silicon - Si	Lead in Paint
Iron - Fe	Silver - Ag	
Lead - Pb	Sodium - Na	



Work Health Testing Illicit drugs and precursors

Surface Swabs

Ephedrine	Amphetamine	MDA
Pseudoephedrine	Methamphetamine	MDMA



Work Health Testing Microbiology

Microbiology

- Airborne Legionella
- Total Airborne Bacteria & Yeasts & Moulds
- Total Surface Bacteria & Yeasts & Moulds
- Airborne E.coli (*including Thermotolerant coliforms*)



Work Health Testing Urine Testing

Urines

- Creatinine
- Thiocyanate *SCN*
- Arsenic *As Total*
- Vanadium *V*
- Nickel *Ni*
- Cobalt *Co*
- Chromium *Cr*
- Cadmium *Cd*
- Mercury *Hg*
- Beryllium *Be*
- Boron *B*
- Aluminium *Al*
- Manganese *Mn*
- Iron *Fe*
- Copper *Cu*
- Zinc *Zn*
- Selenium *Se*
- Lead *Pb*
- Molybdenum *Mo*
- Silver *Ag*
- Antimony *Sb*
- Tin *Sn*
- Barium *Ba*
- Thorium *Th*
- Uranium *U*
- Arsenic speciation in urine
As III, As V, Organic As



Work Health Testing Organics

Alcohols

- Alcohols *extras on request*
- n-Butanol
- Isobutyl alcohol *Isobutanol*
- 2-ethyl-1-hexanol
- Isopropyl alcohol *IPA*
- Methanol
- Propyl alcohol
- Ethanol
- Methanol

Aldehydes & Ketones (Carbonyls)

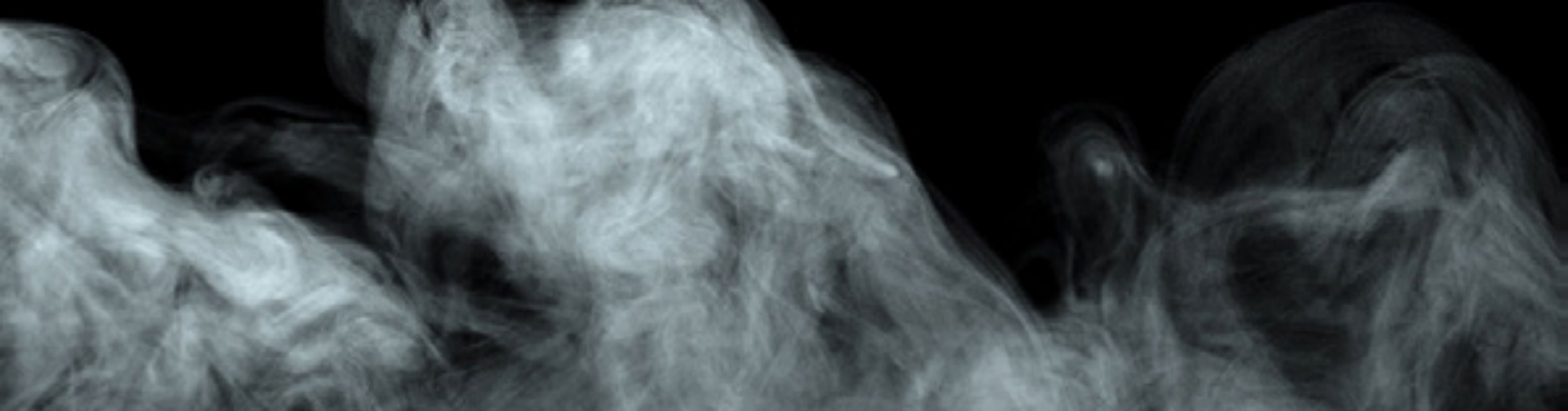
- 2,5 - dimethylbenzaldehyde
- Acetaldehyde
- Acetone/Acrolein
- Benzaldehyde
- Butanal *Butyraldehyde* / isobutyraldehyde
- Crotonaldehyde
- Cyclohexanone
- Decanal
- Formaldehyde
- Heptanal
- Hexanal *Hexaldehyde*
- Isobutyraldehyde
- Isovaleraldehyde
- m/p-tolualdehyde
- Methacrolein
- Methyl ethyl ketone *MEK*; *2-butanone* / Methacrolein
- Nonanal
- Octanal
- o-tolualdehyde
- Propionaldehyde *Propanal*
- Valeraldehyde *Pentanal*

Glycols

- Glycols
- Ethylene glycol
- Diethylene glycol
- Propylene glycol
- Diethylene glycol monoethyl ether *2-(2-ethoxyethoxy) ethanol or Carbitol*
- Triethylene glycol
- (±)1,3-butanediol (1,3-butylene glycol)

Miscellaneous Organics

- Asphalt / Bitumen Fumes *can also run PAH's off extract if required - pricing below*
- Bisphenol A *BPA*
- Carbon disulphide
- Coal Tar Pitch Volatile *CTPV - gravimetric total Can also run PAH's off extract if required - pricing below*
- Formaldehyde
- Nicotine
- OCP on membrane filters
- OCP on sorbent tubes only
- OCP on sorbent tubes with PTFE
- pre-filter for particulate fraction
- PAH on membrane filters
- PAH on sorbent tubes
- PAH on sorbent tubes with PTFE pre-filter for particulate fraction
- Paraquat/Diquat on filters
- PCB's in Oil *Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260*
- PCB's in wipes *Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260*
- Phenols Alkyl *Phenol and methyl phenols*
- Speciated Phenols
- Phthalates on sorbent tubes
- Phthalates on sorbent tubes with an MCE pre-filter



Work Health Testing Organic Vapours Charcoal tubes/badges Solvent Elution

Miscellaneous VOC's

- Naphtha *excluding Light Naphtha - C5-<C6*
- Light Diesel
- Petrol, Kerosene, etc.
- Vapours *Sum of TVOC C6-C9 and SVOC C10-C15*
- TRH / TVOC's and SVOC's *C6-C9 and C10-C15*

Ketones

- Acetone
- DIBK *diisobutyl ketone*
- MEK *2-butanone*
- MIBK *4-methyl-2-pentanone*
- MIPK *3-methyl-2-butanone*
- Cyclohexanone
- MtBE *methyl tert butyl ether*

Halogenated VOC's (VCH, etc)

- 1,1,1,2-tetrachloroethane
- 1,1,1-trichloroethane
- 1,1,2,2-tetrachloroethane
- 1,1,2-trichloroethane
- 1,1-dichloroethane
- 1,1-dichloroethene
- 1,1-dichloropropene
- 1,2,3-trichlorobenzene
- 1,2,3-trichloropropane
- 1,2,4-trichlorobenzene
- 1,2-dibromo-3-chloropropane
- 1,2-dibromoethane
- 1,2-dichlorobenzene
- 1,2-dichloroethane
- 1,2-dichloropropane
- 1,3-dichlorobenzene
- 1,3-dichloropropane
- 1,4-dichlorobenzene
- 2,2-dichloropropane
- 2-chlorotoluene
- 4-chlorotoluene
- Bromobenzene
- Bromochloromethane *Chlorobromomethane*
- Bromodichloromethane *Dichlorobromomethane*
- Bromoform *tribromomethane*
- Carbon tetrachloride
- Chlorobenzene *Monochlorobenzene*
- Chloroform *trichloromethane*
- cis-1,2-dichloroethene
- cis-1,3-dichloropropene
- Dibromochloromethane *Chlorodibromomethane*
- Dibromomethane
- Hexachlorobutadiene
- Tetrachloroethene *PCE, Perchloroethylene*
- trans-1,3-dichloropropene
- Trichloroethylene *TCE, Trichloroethene*



BTEX/MAH

- Benzene
- Toluene
- Ethylbenzene
- m/p-Xylenes
- o-xylene
- MtBE *methyl tert butyl ether*
- 1,2,4-trimethyl benzene
- 1,3,5-trimethyl benzene
- 4-isopropyl toluene
- a-methyl styrene
- Isopropylbenzene *Cumene*
- Naphthalene
- n-butyl benzene
- n-propyl benzene
- sec-butyl benzene
- Styrene *Vinyl benzene*
- tert-butyl benzene

Alkanes

- Hexane *n-hexane C6*
- Heptane *n-heptane C7*
- Octane *n-octane C8*
- Nonane *n-nonane C9*
- Decane *n-decane C10*
- Dodecane *n-dodecane C12*

Jey Fuel Compounds (additional to BTEX)

- Cyclohexane
- 3-methylhexane
- Methylcyclohexane

Paint & Other Industrial Solvents

- Acrylonitrile
- n-Butyl acetate
- Ethyl acetate
- Ethyl acrylate
- n-Butyl acrylate
- 1-chlorobutane
- Ethyl methacrylate
- Methyl methacrylate
- Methyl acrylate

High Odour Compounds

- Dimethyldisulphide
- Methylcyclopentane
- 3-methylpentane

Paint & Other Industrial Solvents

- 1,4-Dioxane
- Benzyl Chloride
α-Chlorotoluene
- Epichlorohydrin
- Diethyl ether *ethyl ether*
- Propionitrile
- cis-1,4-dichlorobutene
- trans-1,4-dichlorobutene
- Nitrobenzene
- Chloroprene
2-chloro-1,3-butadiene, Neoprene Latex/Rubber
- 1,1,2-trichlorotrifluoroethane
Freon 113
- Dichloromethane
methylene chloride
- Iodomethane
- Acetonitrile

Gases in Air - Special Suite 5

- Vinyl Chloride
- Chloroethane
- Dichlorofluoromethane
- Trichlorofluoromethane
- Bromomethane/
Chloromethane

Additional VOC's on request please contact the laboratory



Air Quality and Soil Vapour Gases, Vapours and Solvents

Gases (Light and Permanent)

- H₂ *Hydrogen*
- O₂ *Oxygen*
- N₂ *Nitrogen*
- CH₄ *Methane*
- CO *Carbon Monoxide*
- CO₂ *Carbon Dioxide*
- He *Helium*
- Ethane
- Butane
- Hydrocarbon speciation
C₁-C₆ & >C₆



Air Quality and Soil Vapour VOCs

VOC's in air USEPA TO15 or TO17 or m18

1,1,1-trichloroethane	1,2-dichlorobenzene	4-ethyl toluene
1,1,2,2-tetrachloroethane	1,2-dichloroethane	acetone* (on request)
1,1,2-trichloroethane	1,2-dichloropropane	acrolein
1,1-dichloroethane	1,3,5-trimethylbenzene	benzene
1,1-dichloroethene	1,3-butadiene	benzyl chloride
1,2,4-trichlorobenzene	1,3-dichlorobenzene	bromodichloromethane
1,2,4-trimethylbenzene	1,4-dichlorobenzene	bromoform
1,2-dibromoethane	1,4-dioxane	



VOC's in air USEPA TO15 or TO17 or m18

- 1,1,1-trichloroethane
- 1,1,2,2-tetrachloroethane
- 1,1,2-trichloroethane
- 1,1-dichloroethane
- 1,1-dichloroethene
- 1,2,4-trichlorobenzene
- 1,2,4-trimethylbenzene
- 1,2-dibromoethane
- 1,2-dichlorobenzene
- 1,2-dichloroethane
- 1,2-dichloropropane
- 1,3,5-trimethylbenzene
- 1,3-butadiene
- 1,3-dichlorobenzene
- 1,4-dichlorobenzene
- 1,4-dioxane
- 4-ethyl toluene
- acetone *on request*
- acrolein
- benzene
- benzyl chloride
- bromodichloromethane
- bromoform
- bromomethane
- carbon disulfide
- carbon tetrachloride
- chlorobenzene
- chloroethane
- chloroform
- chloromethane
- cis-1,2-dichloroethene
- cis-1,3-dichloropropene
- cyclohexane
- dibromochloromethane
- dichlorodifluoromethane
freon-12
- ethanol
- ethyl acetate
- ethyl benzene
- freon-113
- freon-114
- heptane
- hexachlorobutadiene
- hexane
- isopropyl alcohol
- m/p-xylene
- methyl butyl ketone *MBK*
- Methyl Ethyl Ketone *MEK*
- methyl isobutyl ketone *MIBK*
- methyl methacrylate
- methyl tert butyl ether *MTBE*
- methylene chloride
dichloromethane DCM
- naphthalene
- o-xylene
- propylene
- styrene
- tetrachloroethene
- tetrahydrofuran
- toluene
- trans-1,3-dichloropropene
- trans-1,2-dichloroethene
- trichloroethene
- tri chlorofluoromethane
freon-11
- vinyl acetate
- vinyl chloride
- 1,1,1,2-tetrachloroethane
- 1,1-dichloropropene
- 1,2,3-Trichlorobenzene
- 1,2,3- trichloropropane
- 1,2-dibromo-3-chloropropane
- 1,3-dichloropropane
- 2,2-dichloropropane
- 2-chlorotoluene
- 4-chlorotoluene
- 4-isopropyltoluene
- bromobenzene
- dibromomethane
- isopropylbenzene
- n-butylbenzene
- n-propylbenzene
- sec-butylbenzene
- tert-butylbenzene



Ozone Precursors

- 1,2,3-trimethylbenzene
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- 1-butene
- 1-hexene
- 1-pentene
- 2,2,4-trimethylpentane
- 2,2-dimethylbutane
- 2,3,4-trimethylpentane
- 2,3-dimethylbutane
- 2,3-dimethylpentane
- 2,4-dimethylpentane
- 2-methylheptane
- 2-methylhexane
- 2-methylpentane
- 3-methylheptane
- 3-methylhexane
- 3-methylpentane
- 4-ethyl toluene
- Benzene
- cis-2-butene
- cis-2-pentene
- Cyclohexane
- cyclopentane
- Ethyl Benzene
- Heptane
- Hexane
- iso-butane
- iso-pentane
- iso-prene
- **2-methyl-1,3- butadiene**
- isopropylbenzene
- m/p-xylene
- m-diethylbenzene
- methylcyclohexane
- methylcyclopentane
- methyltoluene
- n-butane
- n-decane
- n-dodecane
- n-octane
- nonane
- n-pentane
- n-propylbenzene
- n-undecane
- o-ethyltoluene
- o-xylene
- p-diethylbenzene
- propane
- propylene
- Styrene
- Toluene
- trans-2-butene
- trans-2-pentene

Fixed Gases

- Methane
- Ethane
- Ethylene
- Propane
- Propylene
- iso-Butane
- n-Butane
- 1,2-Propadiene
- Acetylene
- trans-2-Butene
- 1-Butene
- i-Butylene
- cis-2-Butene
- iso-Pentane
- n-Pentane
- 1,3-butadiene
- Methyl acetylene
- trans-2-Pentene
- 1-Pentene
- 2-Methyl-2-Butene
- cis-2-Pentene
- Carbon Dioxide
- n-Hexane
- **C6+ Hexane isomers**
- Oxygen
- Nitrogen *note N2 and He cannot be reported together*
- Carbon monoxide
- Helium *note N2 and He cannot be reported together*
- Hydrogen



TPH various bands / Air Phase Hydrocarbons (Non-methane Hydrocarbons)

- C5-C8 aliphatics
- C9-C12 aliphatics
- C9-C10 aromatics

other fractions C5-12 available, contact the laboratory

Sulphur Speciation

- H₂S
 - COS
 - MeSH
 - EtSH
 - Me₂S
- CS₂ is part of VOC's by TO15*

Dioxins and Furans (PCDD/Fs)

- Dioxins and Furans *PCDD/Fs*
- PAHs
- PCDD/Fs + PAHs combined

Other

- Fluorides *Gaseous & Acid Soluble Particulates*
- Formaldehyde in air
- Hydrocarbon speciation *C1-C6 & >C6*
- TVOC as Toluene in bags
- PAH in PUF
double price if PUF + Filter needs analysis

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