

Expert Witness & Litigation

ILEVE
Institute of Local Exhaust
Ventilation Engineers
BOHS
The Chartered Society for
Worker Health Protection

LEV 2020
Extracting the
Best Practices
Tuesday 25th February 2020 | Hilton East Midlands Airport

Dougie Collin –
Chartered Occupational
Hygienist



Worker
Health Protection

What is an Expert Witness?

- can be anyone with knowledge or experience of a particular field or discipline beyond that to be expected of a layman.
- duty is to give to the Court or tribunal an impartial opinion on particular aspects of matters within his expertise which are in dispute.
- The Court must give permission for an Expert Witness to give evidence.

An Expert Witness Will

- Provide an independent expert opinion in their area of expertise in accordance with the instructions they are given.
- Reported information abides by the rules set by the court or tribunal rules.
- Provide a truthful, impartial & independent opinion

An Expert Witness Will Not

- Argue a case on behalf of their client

Acceptance of instructions

Experts should ensure that they receive clear instructions from solicitors (in writing unless this is not practical) specifying the solicitor's requirements, which should cover:

- (a) Basic information such as names, addresses, telephone numbers, dates of birth, and dates of incidents;
- (b) The type of expertise which is called for;
- (c) The purpose for requesting the report, and a description of the matter to be investigated;
- (d) Questions to be addressed;
- (e) The history of the matter, identifying any factual matters that may be in dispute;
- (f) Details of any relevant documents:

Acceptance of instructions - continued

- (g) Whether proceedings have been commenced or are contemplated, the identity of the parties, and whether the expert may be required to attend to give evidence;
- (h) Whether prior authority to incur the estimated fees needs to be obtained by the solicitor before the instructions can be confirmed;
- (i) In the case of medical reports: where the medical records are situated (including, where possible, the hospital record number); whether or not the consent of the client/patient to an examination and disclosure of records has been given; and whether or not the records are to be obtained and provided by the solicitor;
- (j) Specified timescale for the production of any report

When to Accept

- Has the knowledge, experience, expertise, qualifications, or professional training appropriate for the assignment;
- Has the resources to complete the matter within the timescales and to the standard required for the assignment.

Terms of Business

Experts should provide Terms of Business for agreement prior to the acceptance of any instructions. These should include:

- (i) Daily or hourly rates of the experts to be engaged on the assignment or alternatively an agreed reasonable fee for the project or services;
- (ii) Treatment of travelling time;
- (iii) Travelling or other expenses or outlays;
- (iv) Rates for attendance at court (note that this may be subject to a fixed limit);
- (v) Provision for payment of a specified fee in the event of late notice of cancellation of a court hearing;
- (vi) Provision for preferred timing of payment.

Terms of Business

Experts must comply with the Code of Conduct of any professional body of which he/she is a member.



Independence

- a) When giving evidence at court, the role of a witness of fact, or an expert witness, is to assist the court and remain independent of the parties;
- b) A solicitor must not make or offer to make payment to a witness contingent upon the nature of the evidence given.
- c) Experts will disclose to solicitors at the start of each project any personal or financial or other significant circumstances which might influence work for the client in any way not stated or implied in the instructions, in particular:
 - Any directorship or controlling interest in any business in competition with the client;
 - Any financial or other interest in goods or services (including software) under dispute;
 - Any personal relationship and/or professional relationship, and the nature thereof, with any individual involved in the matter;

Independence - Continued

- The existence but not the name of any other client of the expert with competing interests;
- Whether the expert has worked with the expert instructed by the opposing party (if known).

Note: Any actual or potential conflict of interest must be reported to the solicitor as soon as it is raised or becomes apparent and the assignment must be terminated.

Competency in Occupational Hygiene



A competent person should have the skills, knowledge and experience needed to help an employer to manage health and safety in their business. It's not usually essential for them to have formal qualifications and they're not required by law to have formal training, although it can help.

An expert witness on the other hand not only needs to be “competent” but has to satisfy the court through experience and certification.

Facts not Opinion



WLO

Advice for managers

COSHH essentials for
welding, hot work and
allied processes



A small survey of exposure to
stainless steel welding fume



BS EN ISO 10882-1:2001

Health & Safety in Welding and Allied Processes -
Sampling of Airborne Particles and Gases in the
Operator's Breathing Zone



Metals and metalloids in air by
X-ray fluorescence spectrometry

Change in Enforcement
Expectations for Mild Steel
Welding Fume

Health and Safety Executive - Safety alert	
Department	All HSE
Name:	
Bulletin No:	STSU1 - 2019
Issue Date:	February 2019
Target Audience:	All workers, employers, self-employed, contractors and any others who undertake welding activities, including mild steel, in any industry.
Key Issues:	<ul style="list-style-type: none"> There is new scientific evidence that exposure to all welding fume, including mild steel welding fume, can cause lung cancer. There is also limited evidence linked to kidney cancer. There is a change in HSE enforcement expectations in relation to the control of exposure of welding fume, including that from mild steel welding. All businesses undertaking welding activities should ensure effective engineering controls are provided and correctly used to control fume arising from those welding activities. Where engineering controls are not adequate to control all fume exposure, adequate and suitable respiratory protective equipment (RPE) is also required to control risk from the residual fume.



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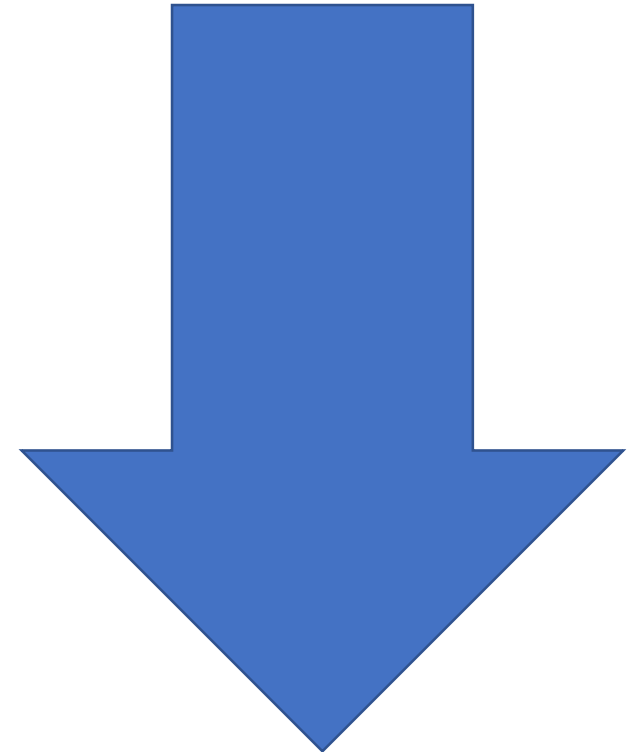
Monitoring the Efficiency of Scrubbers and Filters:

The Use of Photoionisation Detectors (PIDs) to Identify
the Performance of VOC Scrubbers

Chris Mottershaw
Product Specialist Manager, Shawcity

Overview:

- VOCs
- PIDs
- Ways of monitoring scrubbers
- Examples
- Wrap-up / questions



Who are Shawcity?

- Independent, impartial and privately-owned since 1976
- Partners with a range of world-leading manufacturers
- Sale and hire of monitoring equipment, specialising in:
 - Environmental
 - Health & Safety
 - Occupational Hygiene
- Authorised in-house service & calibration centre



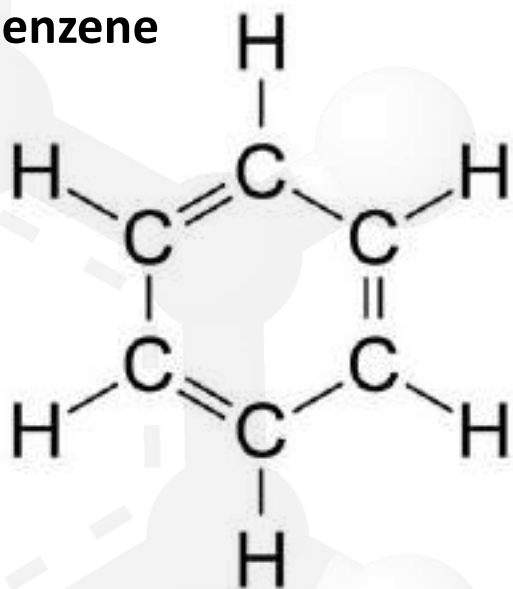
Life-saving solutions



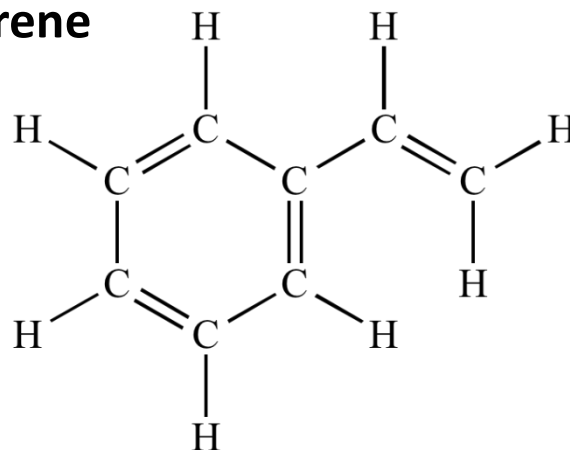
What are VOCs?


Volatile Organic Compounds
Compound

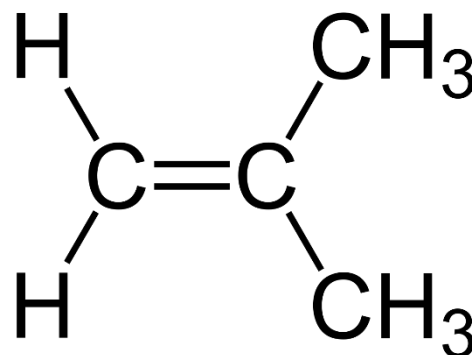
Benzene



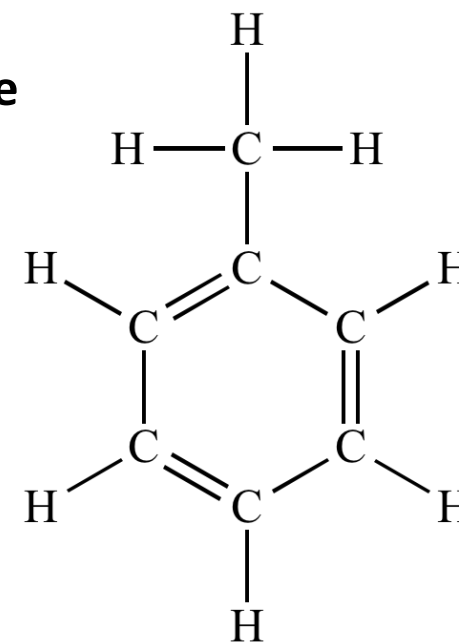
Styrene



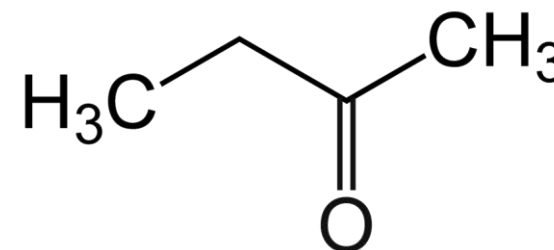
Isobutylene



Toluene



MEK, Butanone



Exposure to VOCs



SHORT TERM EFFECTS



HEADACHE



NOSE, THROAT,
EYES INFLAMMATION



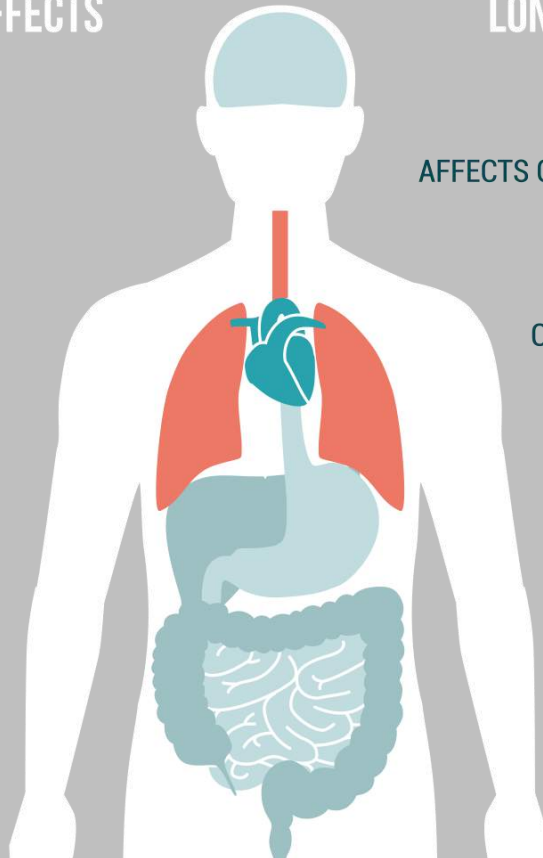
COUGHING,
PAINFUL BREATHING



PNEUMONIA,
BRONCHITIS



SKIN IRRITATION



LONG TERM EFFECTS



AFFECTS CENTRAL NERVOUS SYSTEM
(HEADACHE, ANXIETY)



CARDIOVASCULAR DISEASES



RESPIRATORY DISEASES
(ASTHMA, CANCER)



IMPACTS ON LIVER,
SPLEEN, BLOOD



IMPACTS ON
REPRODUCTIVE SYSTEM





Health and Safety
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BETA

This is a new way of showing guidance - [your feedback](#) will help us improve it.

Freedom of information

Operational guidance

Operational guidance (enforcing authority)

Publication date

Topic inspection packs (TIPs)

Operational Circulars (OCs)

Operational Minutes (OMs)

Sector Information Minutes
(SIMs)

Permanent manuals

Semi-permanent circulars
(SPCs)

Related content

- [HSE statistics](#)
- [Enforcement database](#)
- [RIDDOR statistics](#)
- [H&S Guidance](#)

Health and Safety (Enforcing Authority) Regulations 1998

Publication date
17/07/15
Review date
17/07/19
Guidance owner
Operational Strategy Division: Local Authority Unit (LAU)
Target Audience
All HSE and Local Authority inspectors

- [Summary](#)
- [Introduction](#)
- [Action](#)
- [Detailed comment on the Regulations](#)
 - [Regulation 2\(1\) - Interpretation](#)
 - [Agricultural activities](#)
 - [Construction work and contractor](#)
 - [Common Parts](#)
 - [Dock premises](#)

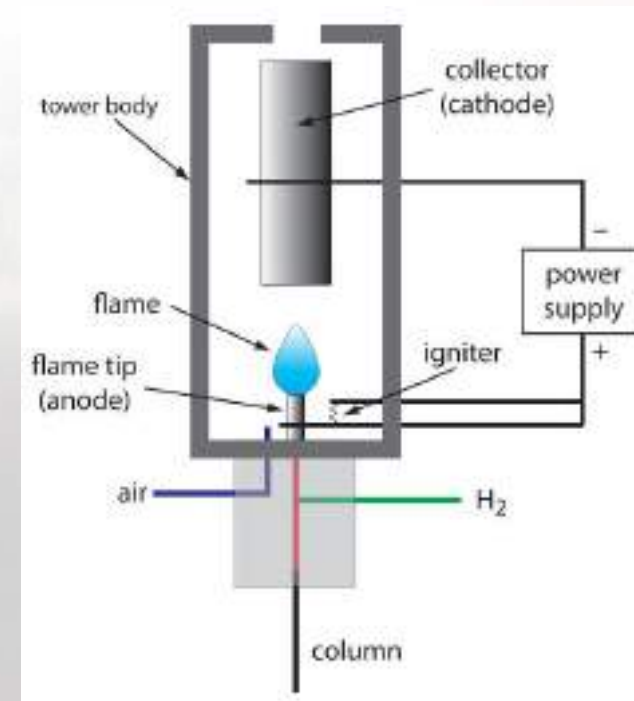
EA Regulations & Other Legislation

Why measure VOCs?

- Emissions
- Health & Safety
- Cost



Methods of Measurement



The PID

Photoionisation Detector



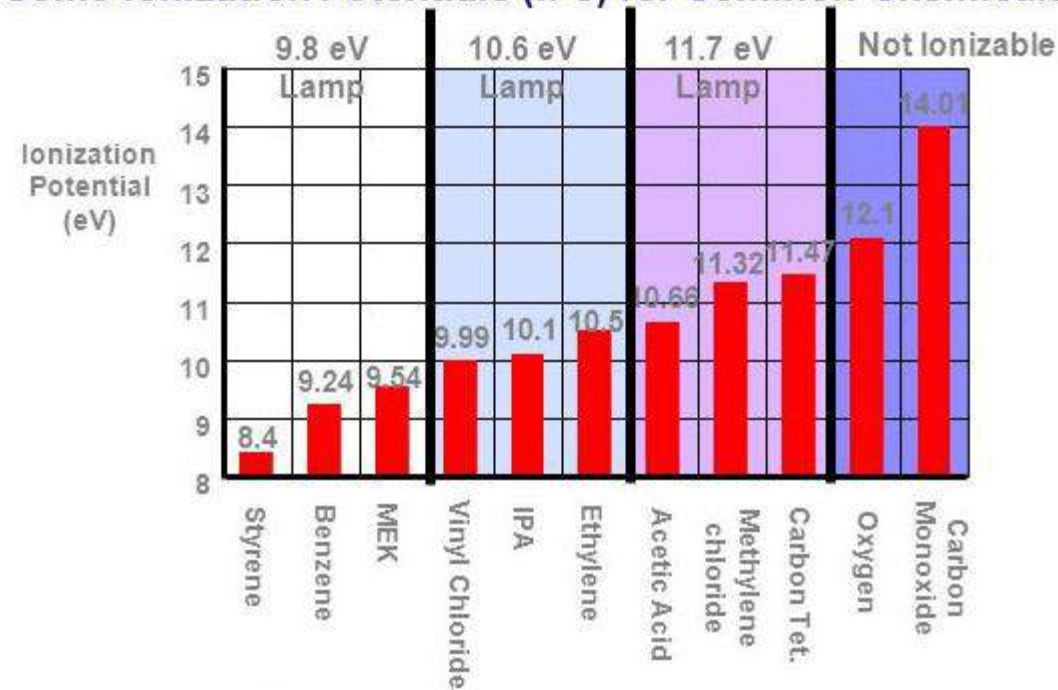
Unique Advantages of a PID

What Does a PID Detect?

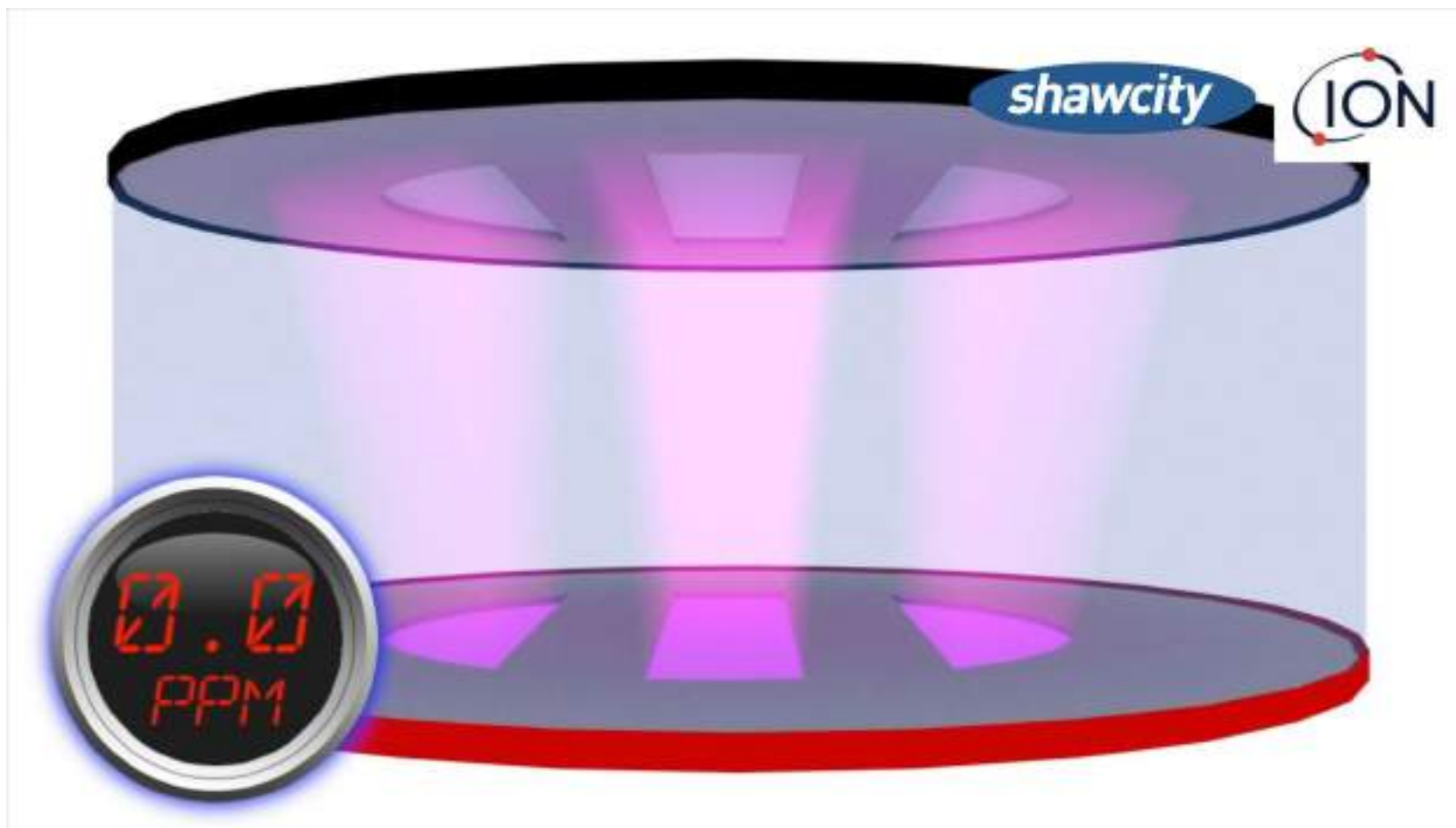
10, 10.6 and 11.7eV lamps

Chemical	Ionization Energy (eV)	Lamp 1 (9.8 eV)	Lamp 2 (10.6 eV)	Lamp 3 (11.7 eV)
Benzene	9.25	0.55	0.47	0.60
Ammonia	10.16	No Response	10.90	5.70
Methylene Chloride	11.32	No Response	No Response	0.89
Methane	12.61	No Response	No Response	No Response
Isobutylene (Cal Gas)	9.24	1.00	1.00	1.00

Some Ionization Potentials (IPs) for Common Chemicals

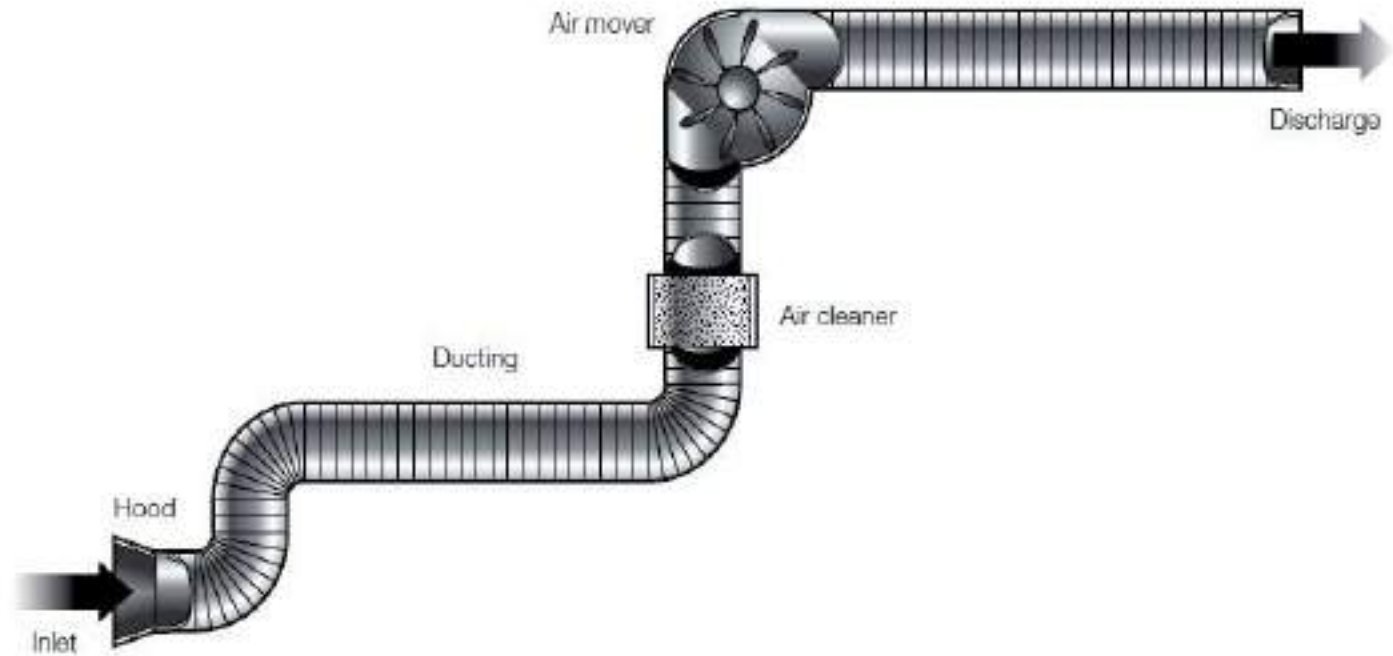


Common Issues with PIDs, & the Solution

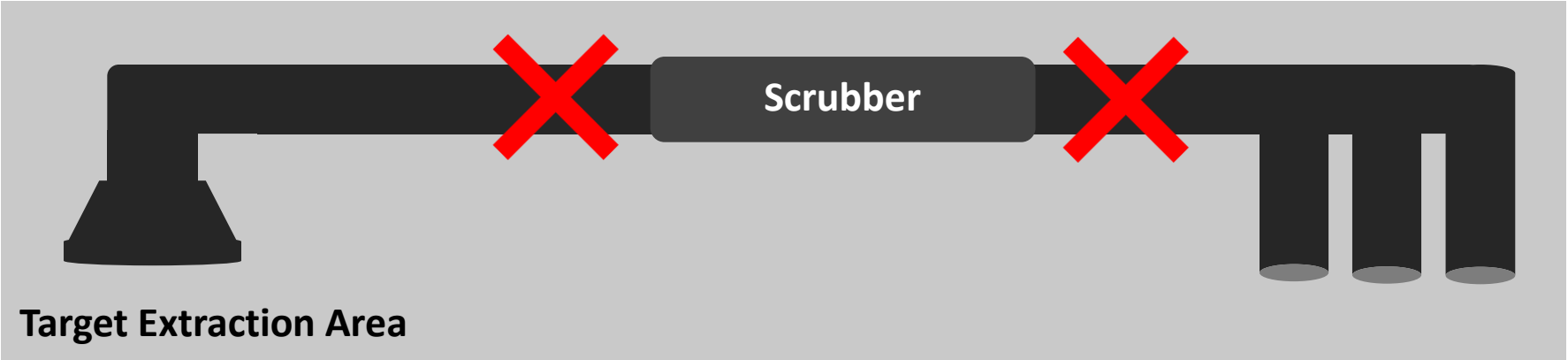
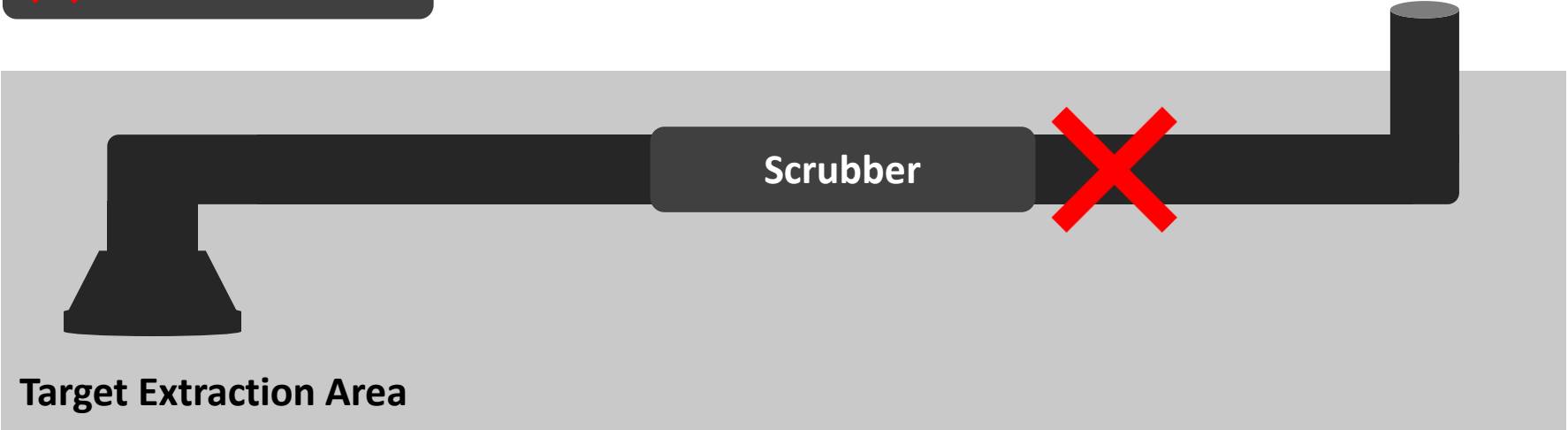


Measuring VOCs in Scrubbers

- Filter media
- Where to monitor?



 = Measure Here



What Will Monitoring Show?

- Filter breakthrough, exceeding emissions, reduce costs and maintenance
- If pre- and post-filter, predictive scrubber reports, predict maintenance
- High levels of sensitivity (ppb, ppm, mg/m³)

Falco

Analog and Digital Output

4 Sensitivity Ranges in 2 Variations

Bright LED Display with 2 Alarm Levels

Typhoon Proof Technology



Falco TAC

10.0eV Lamp



Tiger

95dB Alarm & LED Visual Alarms

Sensitivity & Range

Pumped Unit



Tiger Select

10.0eV Lamp



Cub

- Personal safety device
- Diffusive model
- Also comes as Cub TAC (with 10.0eV lamp)



Industry Examples of VOC Detection in LEV Systems

- Car manufacture / repair – Fixed VOC system
- Plastic manufacturer – Fixed VOC system
- Petrochemical – Fixed VOC System
- Airports & Helipad – Fixed VOC System
- Pharmaceutical – Fixed VOC System

Benefits of VOC Monitoring with PID

- Easy to operate & interpret data
- No unexpected fines!
- Accurate filter/scrubber assessment
- Monitor internal manufacturing processes

Shawcity and PIDs

- Leading manufacturers
- Wearable, portable & fixed options
- Hire, purchase, in-house service & calibration, full training and installation
- Our speciality!

Thank you for your time.
Any questions?

Chris Mottershaw
Product Specialist Manager, Shawcity