



Science on Trial: What Environmental Consultants Need to Know About Giving Evidence in Court



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SCIENCE ON TRIAL: WHAT ENVIRONMENTAL CONSULTANTS NEED TO KNOW ABOUT GIVING EVIDENCE IN COURT

PRESENTATION TO SMART REMEDIATION

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BUT I WON'T END UP IN COURT...

- **Any routine matter may end up in court**
 - You, your company or your client may be charged with an environmental offence
 - Your client may become involved in civil litigation
 - A dispute about the quality of your work may arise – between you and the client
 - Regulators or the public may become concerned about a project
- **There are real consequences to any of the above scenarios – costs, delay and potential impacts on the project itself**

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SCIENCE IN THE COURTROOM

- Courts are gatekeepers: judges decide what evidence is allowed
- Evidence must be admissible to be allowed in court and considered by the judge in deciding the case
- The laws and rules of evidence decide what is admissible

Just because you did the work (investigation, delineation or remediation), doesn't mean the court will accept your work or opinion...

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EVIDENCE IN COURT

The white car was speeding down Highway 10

- The white car was travelling fast
- The white car was speeding
- As a police officer, I'm trained to use photo radar. I calibrated my machine that day and used it, in accordance with all of my instructions and training, to take a speed reading of the white car. I then entered into my notebook that the car was travelling 110 km/hour.



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OPINION EVIDENCE

Why do we allow the police officer to testify the car was speeding?

- **Courts only allow opinion evidence (rather than fact evidence) in two cases**
 - The kind of opinions lay people commonly and reliably have that are based on a series of observations – “the car was travelling quickly”
 - Expert opinion evidence – special or peculiar knowledge through study or experience

Why do we need knowledge about the process he used to arrive at his conclusion?

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REQUIREMENTS FOR EXPERT OPINION

- **The key factors in determining if expert evidence is admissible:**
 1. Relevance
 2. Necessity
 3. Evidence is otherwise admissible based on rules of evidence
 4. Given by a properly qualified expert
 - Independent, impartial and unbiased
 - Actually an expert...
- Based on “sound science”

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SOUND SCIENCE OR NOVEL THEORY?

- **Special scrutiny is given to “novel science”**
 - whether the theory or technique can be and has been tested
 - whether the theory or technique has been subjected to peer review and publication
 - the known or potential rate of error or the existence of standards
 - whether the theory or technique has been generally accepted

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RELIABILITY AND SCIENTIFIC EVIDENCE

- Reliability - the “trustworthiness” of a piece of evidence – is an important factor in the admissibility of any evidence or expert witness
- It is different than credibility – the sincerity of a witness – and is focused more on accuracy
- Consideration of reliability may depend on the evidence, but in technical and scientific evidence, data quality is an important consideration

Can we trust the data and opinion being presented in court to tell the real story?

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ENVIRONMENTAL CONSULTANTS IN THE COURTROOM

- **May act as a party's "expert witness"**
 - Retained for the purpose of providing an opinion on one of the matters in issue (source of contamination, standard of care, etc.)
- **May be a participant expert**
 - Can give opinion evidence based on direct experience and participation in an event
- **Summons (subpoena) by an opposing party**
- **Data collected or work done may be needed as factual evidence (foundation for another witness)**

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LESSONS LEARNED IN A VOIR DIRE

- **Recent case involved a voir dire on the admissibility of field and lab test results**
- **Cross-examination of environmental monitor and testimony of an expert witness**
- **Court agreed the results were unreliable and could not be admitted into evidence**
 - Court could not consider that data **at all** in arriving at its decision
- **Experts were not permitted to rely on the data providing the foundation for their opinions**

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LESSONS LEARNED IN A VOIR DIRE

- It is rare for evidence to be excluded entirely from a trial
- Typically, reliability concerns go to weight and not admissibility
- But it is entirely within a judge's authority to exclude data and expert opinion from a trial

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LESSONS LEARNED IN A VOIR DIRE

- **Cross-examination focused on reliability:**
 1. Training received by the environmental manager
 2. Use of field meter **and understanding of how it worked**
 3. Age and condition of the equipment
 4. Calibration
 5. Secondary verification
 6. QA/QC
 7. Standard operating procedure and industry standards
 8. Chain of custody
 9. Record keeping

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LESSONS LEARNED IN A VOIR DIRE

- The accuracy of field meter readings depend on the training of the operator and many other factors, including using proper calibration practices and the condition of the equipment
- Where the operator is unaware of those factors and their impact on the results, the reliability of the field meter readings are in doubt
- Even “simple” field meter readings must be testified to by a properly qualified expert
- Chain of custody and lack of other “guarantees of reliability” will lead to courts throwing out evidence

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BEST PRACTICES FOR ENVIRONMENTAL CONSULTANTS

- **When doing the work:**
 - Record keeping, record keeping, record keeping
 - Standard practices for field notes, log books
 - Follow those standard practices **every time**
 - Be scrupulous about chain of custody
 - Follow industry standard and best practices (even where not required)
 - Reg. 153/04
 - CSA and other standards
 - *Protocol for analytical methods used in the assessment of properties under Part XV.1 of the Environmental Protection Act*
 - Guidance from professional associations and other organizations in the industry

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BEST PRACTICES FOR ENVIRONMENTAL CONSULTANTS

- **When reviewing the work:**
 - Record keeping, record keeping, record keeping
 - Training for junior staff: not just on “how” but “why”
 - Written standing operating procedures
 - Confirm and review the “nitty gritty”
 - Ensure equipment and technology is available to ensure data quality

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BEST PRACTICES FOR ENVIRONMENTAL CONSULTANTS


- **As an expert witnesses:**
 - Review the underlying foundation of your opinion and that of any opposing parties
 - Be proactive about identifying “reliability” problems
 - Help counsel understand **why** it matters and **explain** that to the court

Lawyers and judges are not scientists, but rely on the scientists to put reliable data and opinion before the court

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