

Occupational hygiene reports: requirements and tips

OHS information for employers and service providers

This bulletin describes the content requirements for occupational hygiene reports, and the competency requirements and qualifications needed to sign off on occupational hygiene work.

KEY INFORMATION

- Employers must assess worker exposure to harmful substances and other hazards such as noise and measure exposures that may exceed occupational exposure limits.
- Persons who perform and sign off on occupational hygiene work must be competent.
- Employers are legally accountable if they hire or direct someone who isn't competent to perform occupational hygiene work.
- Service providers (for example, an occupational health and safety (OHS) consultant) are legally accountable if they are not competent to perform occupational hygiene work or if they provide services that do not meet legislative requirements.

About occupational hygiene

Occupational hygiene is a professional specialty that focuses on keeping workers healthy in their work environments.

Occupational hygiene covers a wide range of topics, including:

- Indoor air quality.
- Exposure to chemicals, vapours, fumes, asbestos, silica, lead, mould, noise, vibration, and temperature extremes.
- Applying the Workplace Hazardous Materials Information System (WHMIS).
- Protection from radiation such as from high-power lasers, X-rays, and other forms of ionizing radiation.

See more about occupational hygiene topics in the [Tips for hiring an OHS consultant](#) bulletin.

Competency requirements

Occupational hygiene work is often complex and individuals who perform occupational hygiene work must be competent.

Competency in occupational hygiene consists of a strong foundation in a relevant science (for example, chemistry, physics, or biology) and mathematics, relevant professional

and academic qualifications, and related experience, skills and abilities.

Some employers may have in-house staff who are competent to perform occupational hygiene work. Other employers may choose to [hire an OHS consultant](#) who has occupational hygiene expertise. In either case, an employer is legally obliged to have occupational hygiene work performed only by competent individuals.

Service providers such as OHS consultants have legal obligations to work within their areas of competency. Under Section 7 of the OHS Act, service providers must provide services that enable employers to meet their OHS obligations. A consultant who provides occupational hygiene services is required to provide a full assessment, interpret results, and provide recommendations to protect the health and safety of workers.

Unqualified or underqualified persons who perform occupational hygiene work can place the health and safety of Alberta's workers at risk. (See [Report sign off](#) for more about qualifications.)

Note that when consultants carry out services, they must do so in accordance with OHS legislation. This includes not posing a danger to themselves or others. For example, if photographs are required and the work site has a flammable atmosphere, the consultant must ensure they use intrinsically safe equipment or otherwise not introduce an ignition source.

Occupational hygiene reports

Types of reports

Occupational hygiene work that examines a hazard is called an occupational hygiene survey. Survey information is presented in reports.

Occupational hygiene reports are known by various names and can include different content, depending on the hazards being assessed. Here are the three common types of occupational hygiene reports.

1) Occupational hygiene reports – general

General occupational hygiene reports provide the results of an assessment of worker exposure to various occupational hazards. They are required so that employers can meet specific OHS requirements.

For example, employers must assess worker exposure to harmful substances (OHS Code, Sections 21-22) and other hazards, such as noise (OHS Code, Section 219). They also must measure exposures that may exceed occupational exposure limits set out in Schedule 2, Table 2 of the OHS Code.

2) Hazardous materials inventory reports

A hazardous materials inventory report will identify whether and where hazardous materials are present in a building. This type of occupational hygiene survey is typically done before a building is renovated or demolished or when an employer is creating an inventory of hazardous materials within a building. Examples of items that can be covered in a hazardous materials inventory report include asbestos, lead, chemical substances or mould.

3) Radiation shielding reports

Radiation shielding reports are another variation of occupational hygiene reports. Shielding assessments are required under Section 291.1 of the OHS Code. Context around what may be included in a shielding assessment can be found in Safety Codes [28](#), [30](#), [35](#) and [20A \(archived\)](#) published by Health Canada, and in Reports [49](#) and [147](#) published by the National Council on Radiation Protection and Measurements. The assessment should clearly articulate the calculations and assumptions (for example, the estimated use frequency of radiation equipment).

Completeness and quality of reports

No matter the type of hygiene report, the work must be performed by competent individuals and the report content must be sufficient to enable employers to meet their obligations under OHS legislation.

While occupational hygiene reports don't need to be lengthy, they must be clear and capture at least the basic information.

If there are gaps in information, the report will not meet legislative requirements. For example, a report that doesn't provide an interpretation of results, isn't clear about how or where samples were collected, falls short on having a reasonable sampling strategy, or includes results from a laboratory that can't demonstrate quality control or professional oversight.

Some examples of relevant information to include in a report include methodology and reasoning, sample collection details, use of an accredited laboratory, and interpretations.

Learn more about report content in the [sample occupational hygiene report outline](#) that starts on page 4.

Report sign-off

As discussed previously, OHS law requires that persons performing occupational hygiene work be competent. Competency includes being qualified, trained, and experienced.

[Table 1](#) (next page) lists the qualifications necessary to perform occupational hygiene work. Individuals who do not have the qualifications listed are not recognized by Alberta OHS as meeting minimum competency requirements.

Laboratory reports

Some types of occupational hygiene work use laboratory services to analyze occupational hygiene samples. These analyses are presented in a laboratory report, which is often included as an appendix in the occupational hygiene report.

Laboratories that perform occupational hygiene work must have (and by extension laboratory reports must indicate) one or more of the following:

- Accreditation through a recognized program, such as those offered by the Canadian Association for Laboratory Accreditation (CALA) or the American Industrial Hygiene Association (AIHA).
- Successful participation (that is, passing the testing) in a proficiency testing program relevant to the type of laboratory service being provided, such as those provided by AIHA or Proficiency Testing Canada.
- That work was performed by a university research laboratory.
- That a professional chemist has overseen the quality of work.

An individual who signs off on a laboratory report is responsible for ensuring the report is correct and accurate.

OHS enforcement

If Alberta OHS reviews an occupational hygiene report, laboratory report, or another type of occupational hygiene document that doesn't meet minimum legislation requirements, OHS can take enforcement action. For example:

- If relevant information is missing from a report or other document, an OHS officer may require the additional information, which must be provided if it exists.
- If there are gaps in quality assurance and control, an OHS officer may order an employer to repeat the occupational hygiene survey or report.
- If a consultant's work places the health and safety of workers in danger or otherwise does not comply with OHS legislation, administrative penalties or prosecutions may apply.

TABLE 1: OCCUPATIONAL HYGIENE REPORT SIGN OFF QUALIFICATIONS

Qualification	May oversee and sign off on the work of others	May sign off on general occupational hygiene reports, depending on competencies ¹	May sign off on hazardous materials inventory reports, depending on competencies ¹	May sign off on radiation shielding reports, depending on competencies ¹
Certified industrial hygienist (CIH) ²	✓	✓	✓	✓
Registered occupational hygienist (ROH) ²	✓	✓	✓	✓
Member of the Canadian College of Physicists in Medicine (MCCPM) ²	✓	-	-	✓
Medical physicist certification recognized by the American Association of Physicists in Medicine ²	✓	-	-	✓
Professional chemist (P.Chem.) ²	✓	-	✓	✓
Professional biologist (P.Biol.) ²	✓	-	✓	-
Professional engineer (P.Eng.) ²	✓	-	✓	✓
Registered occupational hygiene technologist (ROHT)	-	✓	✓	-
University degree in occupational hygiene	-	✓	✓	-
University degree in science combined with: - one of the following OHS professional designations: Canadian registered safety professional (CRSP), Canadian registered safety technician (CRST), certified safety professional (CSP), occupational hygiene and safety technician (OHST), or certified health and safety consultant (CHSC); or - university certificate or university diploma in occupational hygiene, occupational health and safety, or occupational health	-	✓	✓	-
University degree in physics, medical physics, chemistry, or nuclear or biomedical engineering, combined with knowledge of radiation shielding	-	-	-	✓
Diploma in occupational hygiene	-	✓	✓	-
Certificate in hazardous materials assessment that is formally recognized including having oversight by a Canadian or American government regulatory body (for example, British Columbia's asbestos abatement "Level S" Surveyor Safety certification) ^{3,4}	-	-	✓	-

- Individuals must work within their areas of competency. Certified professionals are also bound by their professional code of ethics.
- Persons with this professional designation may oversee and sign off on the work of others **including individuals whose qualifications are not listed in this table**, so long as they do so in alignment with their professional code of ethics.
- Alberta's "Occupational Health and Safety for the Asbestos Worker" course is not a certificate in hazardous materials assessment and on its own is not a sufficient qualification for occupational hygiene report sign off.
- Scope of work is limited to what the certification covers. Certification must be valid and current per governing body requirements.

Occupational hygiene reports: requirements and tips



Sample occupational hygiene report outline – general

This outline describes the basic structure of a general occupational hygiene report. It includes examples of specific content, but these are examples only. **An occupational hygiene report must include all relevant information.** Also note that this outline will need to be adapted for hazardous materials or radiation shielding reports.

1.0 Title

The report's title can be a stand-alone page or an introductory section at the beginning of a report. Examples of information to include:

- Topic and date of the report.
- Name of employer and location of work site examined.
- Name of the consultant or other person who completed the work.
- Date(s) of sampling or monitoring.

2.0 Executive summary

This section summarizes what the report is about and the hygiene survey's main findings. It's usually one page or less in length. Examples of information to include:

- Purpose of the occupational hygiene survey.
- What the occupational hygiene survey examined.
- High-level interpretation of results.
- Summary of recommendations (if applicable) and conclusion.

3.0 Scope of work

This section contextualizes the occupational hygiene survey. Examples of information to include:

- Description of work process, type of work activities, and potential occupational hygiene hazards at the work site.
- Length of time workers may be exposed to occupational hygiene hazards.
- Scope of occupational hygiene work including what is and what is not being examined.

4.0 Legislation or standards

This section references relevant legislation or standards. Examples of information to include:

- Relevant sections of Alberta's OHS Act, Regulation and Code.
- Relevant standards specified in Alberta's OHS Code.
- Relevant standards that are not specified in Alberta's OHS laws (for example, surface sampling standards).

5.0 Sampling strategy and methods

This section gives details about how the occupational hygiene work was done. It includes the rationale for the selected sampling strategy and analytical methods. Examples of information to include:

5.1 Sampling strategy

- Identification of substances or other hazards being examined/tested.
- Identification of similarly exposed groups of workers selected for sampling (for example, identify by job titles).

- Type of monitoring, including number of samples to be collected (including field blanks). Examples of types of monitoring include personal/occupational, bulk, surface, or area.
- Duration of the sampling (for example, full-shift, partial-shift, or task-based sample).
- General rationale for selecting the sampling strategy.
 - Include an explanation of whether the sampling strategy is designed to monitor typical, random, or worst-case scenario days.

5.2 Analytical methods

- Name including identification number of the analytical method used.
- Name of the organization that published the analytical method.
 - For chemical substances, see Section 20 of the OHS Code for a listing of recognized organizations and methods.
 - For noise, see Section 219 of the OHS Code for recognized standards.
- Type of equipment and supplies used to conduct the sampling.
- Basic information about the laboratory that conducted the testing, if applicable. Can specify whether the laboratory:
 - Is accredited for occupational hygiene testing.
 - Participates in proficiency testing.
 - Provided professional sign-off on the laboratory report.

6.0 Results

This section compares the hygiene sampling results with Alberta's occupational exposure limits (OELs).

- A table can be used to present the results. (See the sample Table A below.)
- If sampling results show levels being less than detection, the detection limit should be below the OEL (ideally 50% below).
- Any results that exceed an OEL can be highlighted or bolded for readability.

TABLE A: OCCUPATIONAL HYGIENE SAMPLING RESULTS (SAMPLE)

Sample ID	Collection date	Substance sampled	Sample type	Occupation or area sampled	Tasks involved	Results (concentration)	OEL for the substance
Sample # 1	Sep. 30, 2023	Respirable crystalline silica	Occupational - full shift	Equipment operator	Operating truck	0.0125 mg/m ³	0.025 mg/m ³
Sample #2	Sep. 30, 2023	Asbestos	Area	Clean room	N/A	<0.01 f/cc	0.1 f/cc
Sample #3	Sep. 30, 2023	Refractory ceramic fibres	Occupational - full shift	Insulation installer	Removal of insulation	5 f/cc	0.2 f/cc
Sample #4	Sep. 30, 2023	Dichloro-methane (DCM)	Occupational - task	Laboratory technician	Using solvent	10 ppm	50 ppm
Sample #5	Sep. 30, 2023	Noise	Occupational - full shift	Construction worker	Jack hammering	100 dBA L_{ex}	85 dBA L _{ex}

Bolded font = values that are greater than the 8-hour OEL.

< = results that are below the limit of detection (number provided is the detection limit).

f/cc = fibres of substance per cubic centimeter of air.

mg/m³ = milligrams of substance per cubic metre of air.

ppm = concentration of substance in parts per million.

dBA L_{ex} = sound level in A-weighted decibels averaged over workday and adjusted to an 8-hour equivalent.

7.0 Discussion and recommendations

This section discusses and explains the results, and as applicable, gives recommendations for controls to reduce worker exposures, or otherwise protect the health and safety of workers. Examples of information to include:

7.1 Discussion

- How the conditions at the work site on the days of sampling may have affected the sampling results (for example, how a rainy day may have affected the sampling results).
 - In other words, how conclusive or representative the monitoring results are.
- Whether the personal protective equipment (PPE) and hygiene practices used at the work site at the time of monitoring are suitable to protect workers.

7.2 Recommendations

- Recommendations for controls to keep exposures as low as reasonably achievable below the OEL (OHS Code, Section 16).
- Recommendations must follow the hierarchy of controls set out in Section 9 of the OHS Code: elimination/substitution, engineering, administrative, PPE, or a combination if the hazard cannot be eliminated or controlled by one control method.
- Whether additional occupational hygiene sampling or medical monitoring should be done.
 - If additional sampling or monitoring is recommended, include the rationale and any relevant details (such as when or under what conditions to conduct additional sampling).

8.0 Report sign-off

An occupational hygiene report must be signed by the person or persons who oversaw the occupational hygiene work and prepared the report. Information must include:

- Name and qualifications of the individuals who created the sampling strategy, collected the samples, interpreted the results, prepared the report, and oversaw the work.
- Name and [qualifications](#) of the individuals signing off on the report.
- For individuals who don't hold CIH, ROH or ROHT professional designation, or a degree or diploma in occupational hygiene, an explanation of how they are competent to perform the work.

9.0 Appendices

Appendices include supplementary information that supports the occupational hygiene report. Below are examples of information that may be included in various appendices:

Appendix A – Laboratory reports/data logs

- Copy of the laboratory report, including chain of custody forms (for example, chemical analysis).
- Data logs from data logging instruments (for example, noise dosimeters or gas monitors).

Appendix B – Field notes

- Sampling equipment details (for example, pre and post calibration flow rates, start and stop times for sampling equipment, sample and media serial numbers, and any notes related to equipment malfunctioning).
- Readings recorded from real-time reading instruments (for example, sound level meters or gas monitors).
- Exposure controls observed at the time of sampling (for example, windows/doors open or closed, ventilation systems used, PPE used [including the make and model of equipment and cartridges/filters], work rotation policies in place).
- General work site observations (for example, number of workers, work tasks including task frequency and duration, and other notes regarding work tasks or work site conditions).
- Environmental conditions (for example, temperature, relative humidity, precipitation, wind speed, general visibility issues with dust or haze in air, background odors).

Appendix C – Calculations

If calculations were performed, include them.

Appendix D – Photographs

Photographs can be labeled to describe what content is relevant.

- Sampling setup (for example, worker wearing sampling pump at work site, location of area sampling).
- Exposure controls in place at work site (for example, ventilation systems, PPE a worker is wearing, or area signage communicating hazard information).
- Site map, floor plan, or noise map in relation to work processes and worker locations.
- Labels on chemical containers including showing their locations.
- Ambient environmental conditions such as observable contaminant dust or haze in the air.

Contact us

OHS Contact Centre

Alberta toll-free

- 1-866-415-8690

Edmonton region

- 780-415-8690

Deaf or hard of hearing (TTY)

- 1-800-232-7215 (Alberta toll-free)
- 780-427-9999 (Edmonton region)

Notify OHS of health and safety concerns

alberta.ca/file-complaint-online.aspx

Call the OHS Contact Centre if you have concerns that involve immediate danger to a person on a work site.

Report a workplace incident to OHS

alberta.ca/ohs-complaints-incidents.aspx

Website

alberta.ca/ohs

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aihaaccreditedlabs.org

AIHA Proficiency Analytical Testing Programs aihapat.org

American Association of Physicists in Medicine

aapm.org

Alberta Society of Professional Biologists aspb.ab.ca

Association of Professional Engineers and Geologists of Alberta apega.ca

Association of the Chemical Profession of Alberta

pchem.ca

Board for Global EHS Credentialing gobgc.org

Board of Canadian Registered Safety Professionals bcrsp.ca

Board of Certified Safety Professionals bcsp.org

CALA Laboratory Accreditation Programs cala.ca

Canadian College of Physicists in Medicine ccpm.ca

Canadian Society of Safety Engineering csse.org

Canadian Registration Board of Occupational Hygienists

crboh.ca

Health Canada Safety Codes

canada.ca/en/services/health/publications/health-risks-safety.html#a1.2

National Council on Radiation Protection and Measurements

ncrponline.org/product-category/reports

Proficiency Testing Canada

ptcanada.org

Tips on selecting an OHS consultant (GS009)

ohs-pubstore.labour.alberta.ca/g009

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