



Saskatchewan Ministry of Environment

GUIDANCE DOCUMENT: Qualified Person Designation

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Amendments

Periodic amendments to this guidance document are anticipated as opportunities for improvement arise. Please ensure that you are using the most recent version. If you have any questions, contact the Ministry of Environment.

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List of Abbreviations and Acronyms

ASTM	American Society for Testing and Materials
CAP	corrective action plan
CEU	continuing education unit
COPC	contaminants of potential concern
CSA	Canadian Standards Association
DRC	direct responsible charge
GIS	geographic information system
QA/QC	quality assurance and quality control
USEPA	United States Environmental Protection Agency

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INTRODUCTION

The Qualified Person Designation guidance document was created to assist persons with the qualified person designation application process.

This guidance document:

- helps determine if a person needs to be designated as a qualified person by the Minister;
- provides instructions for filling out the qualified person application;
- provides information on the generally accepted academic and work experience requirements; and
- lists the core skills and competencies needed by a qualified person to carry out certain activities.

Am I a Qualified Person?

The first step in the process is to determine if you are already defined as a qualified person and do not require to be designated by the Minister. Each individual code chapter identifies the specific activities that require the use of a qualified person and Part 1 of the code chapter lists which class of persons (e.g. applied science technologist, professional agrologist, professional engineer) is considered qualified persons for the specific activity. See Site Assessment Chapter example below.

Code chapters and further information on qualified persons is available on the Ministry of Environment's website at <http://www.environment.gov.sk.ca/code> under Environmental Code.

-Site Assessment Chapter Example

Subsection 2-2(b) of the Site Assessment Chapter requires a qualified person to certify an environmental protection plan:

Alternative Solution

2-2 Every person required to conduct a site assessment shall:

...(b) ensure that a qualified person provides a certificate stating that, in his or her opinion, the methods and components in the environmental protection plan, if carried out in accordance with that plan, will satisfy the results-based objective described in section 2-1;

Subsection 1-3(a) of the Site Assessment Chapter lists the class of persons approved to certify an environmental protection plan:

Qualified persons and certificates

1-3(1) For the purposes of clause 2(1)(bb) of the Act, in this chapter "qualified person" means:

(a) for the purposes of certifying an environmental protection plan and CAN/CSA Z769-00 (R2013) - Phase II Environmental Site Assessment report:

(i) a person licensed to practise professional engineering or professional geoscience pursuant to The Engineering and Geoscience Professions Act;

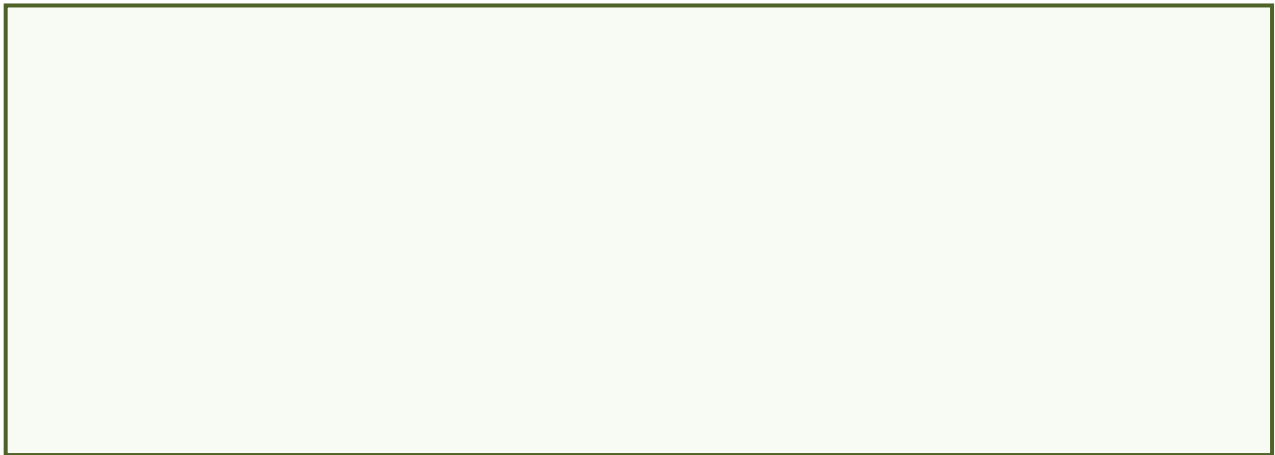
(ii) a person who is a practising member as defined in The Agrologists Act, 1994;

(iii) a person who is an applied science technologist pursuant to The Saskatchewan Applied Science Technologists and Technicians Act and who has 8 years of experience in site assessment that is recognized by the Saskatchewan Applied Science Technologists and Technicians; or

(iv) an individual who is designated by the minister or who is a member of a class of persons designated by the minister pursuant to the Act to undertake that activity;

Those persons that are members of the class of persons listed in section 1-3 in the example above **do not** need to be designated by the Minister provided the work they are carrying out is in their area of competence. Therefore, in the example above, if a person is a practicing member as defined in *The Agrologists Act, 1994* and has the competencies to carry out the work they do not need to be designated by the Minister. Qualified persons not practicing in their area of competence may face disciplinary action by the member's association or enforcement action by the Ministry of Environment.

For those persons who are not members of the class of persons listed in section 1-3 in the example above, individuals may request to be designated by the Minister to become a qualified person.



QUALIFIED PERSON APPLICATION PROCESS

If you do not fall into one of the classes listed in the code chapter and wish to be designated by the minister you will need to apply online.

Video instructions on how to apply online are available at:

<https://www.youtube.com/watch?v=maF3ZHfgrAs>

To apply online:

LOGIN

1. Login to online services at <https://uat.portal.env.gov.sk.ca/login/> (if you have not yet registered with the ministry select 'CREATE AN INDIVIDUAL PROFILE' and follow on screen prompts).
2. Select Individual (Myself) and select 'SELECT IDENTITY'.

SUBMISSION

3. Select 'NEW SUBMISSION'.
4. Select 'QUALIFIED PERSON' >> 'APPLICATION TO BE DESIGNATED AS A QUALIFIED PERSON' from the list.

PRE-FILL CONDITIONS

5. Select 'NEXT'.

APPLICANT INFORMATION

6. Select 'NEXT'.

CONFIRM STAKEHOLDER PROFILE

7. Select 'NEXT'.

REVIEW INDIVIDUAL ORGANIZATIONAL PROFILE

8. Verify information and select 'NEXT'.

QUALIFIED PERSON CHAPTER

9. Select the chapter of the Saskatchewan Environmental Code you are applying to be designated for, once the chapter is selected a drop down menu will appear, select at least one purpose (if renewing a designation include the designation number provided by the ministry), select 'NEXT'.

ACADEMIC QUALIFICATIONS

10. Select 'ADD NEW ACADEMIC DETAIL' (you may skip this step by selecting 'NEXT' if attaching a curriculum vitae or resume along with the application. Proof of academic qualifications is required and should be submitted at step 27 – Attach General Documents).
11. Fill out the required information to include academic detail, select 'DONE'.
12. Repeat step 11 if more than one academic detail is to be added.
13. Once all academic details are included select 'NEXT'.

WORK EXPERIENCE

14. Select 'ADD NEW WORK EXPERIENCE' (you may skip this step by selecting 'NEXT' if attaching a curriculum vitae or resume along with the application).
15. Fill out the required information to include work experience, select 'DONE'.
16. Repeat step 14 if more than one work experience is to be added.
17. Once all work experience is included select 'NEXT'.

MEMBERSHIP

18. Select 'ADD NEW MEMBERSHIP' (you may skip this step by selecting 'NEXT' if attaching a curriculum vitae or resume along with the application).
19. Fill out the required information to include for memberships, select 'DONE'.
20. Repeat step 18 if more than one membership is to be added.
21. Once all memberships are included select 'NEXT'.

REFERENCES

22. Select 'ADD NEW REFERENCE' (you may skip this step by selecting 'NEXT' if attaching a curriculum vitae or resume along with the application).
23. Fill out the required information to include for references, select 'DONE'.
24. At least 2 references are required, repeat step 18.
25. Once at least 2 references are included select 'NEXT'.

ADDITIONAL INFORMATION FORM

26. Include any additional information you may wish to provide, select 'NEXT'.

ATTACH GENERAL DOCUMENT

27. Upload any documents (copies of degrees, diplomas etc. and proof of memberships are required) by selecting 'BROWSE' to select file. Select file to be uploaded, select 'OPEN'. Provide a description and file type being submitted. Select 'SUBMIT FILE'.
28. Repeat step 27 if more than one document to be submitted.
29. Once all documents are submitted select 'NEXT'.

PRE-SUBMIT CONDITIONS

30. Review declaration, select 'I ACCEPT THE CONDITIONS' and select 'SUBMIT'.
31. Your application has now been submitted. To view your application select 'Dashboard' and select the date under 'Date Submitted' column for the application. As the application is processed the 'Status' will be updated.

ACCEPTED ACADEMIC AND WORK EXPERIENCE

When applying to be designated by the Minister, the following illustrates the general type of education and experience the ministry requires, for the specific chapters and activities in the code.

Definitions

Continuing Education Unit (CEU)

Means continuing education unit, as defined by the International Association for Continuing Education and Training (Washington, DC), awarded for various educational/training activities that an operator may have undertaken. One (1) CEU represents ten (10) contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction and qualified instructors.

Direct Responsible Charge (DRC)

Means experience gained through accountability for the performance of, or supervision of daily, on-site analytical duties.

Relevant Experience

Means work experience in the field related to the area of work to be performed.

1 year Post-Secondary Education

Means education obtained beyond high school.

Typically:

- 30 credit hours of university courses based on five classes each of three credit hours per semester over two semesters; or
- 1,200 hours of course content from a technical school.

Substitutions

The ministry allows for substitution of education and experience requirements where applicants may be missing the required education or experience. Substitutions typically may not exceed 50 per cent of any requirement, however, the acceptance of substitutions will be made on a case-by-case basis.

Figure 1 illustrates acceptable equivalents when substituting missing education with experience and conversely, substituting missing experience with education.



FIGURE 1 Equivalent Time Calculation

NOTE: Experience used to meet the experience requirement may not be reused as substitution for the education requirement and conversely education used as substitution for experience may not be reused to meet the education requirement.

The ministry will review and assess related experience and non-traditional education programs not addressed by this policy as required. The assessments will be based on a common understanding of educational or experience requirements needed for the area of work to be performed.

Partial Degrees and Diplomas

For partial degree/diploma credit, the applicant must provide sufficient information concerning courses taken and the contact hours received and passed, for the ministry to review and pass judgment. With the variability of education criteria, no one submission format has been developed. In general, submission of educational information for assessment by the ministry needs to be submitted in a detailed and assessable format. This should include presenting the information in a tabular form that includes information identifying the class name, a class description/outline, calculation of course credit (contact hours, credit hours, etc.). The applicant should work closely with the educational institution to ensure sufficient supporting documentation is submitted to the ministry for review.

The ministry's responsibility rests with the assessment of the applicant's qualifications and not with compiling the information in a coherent and manageable format. If the submission is unclear or raises new questions, the ministry has the right to address these issues with the applicant and hold off on issuing any certificate until satisfied.

CORE SKILLS AND COMPETENCIES

The following lists the core skills and competencies needed by a qualified person to carry out certain activities under the Saskatchewan Environmental Code chapters. When reviewing a qualified person application the ministry will be looking to see how these core skills and competencies are met.

Corrective Action Plan Chapter

Certify Tier 1 Endpoint Corrective Action Plans

A qualified person is required to certify a tier 1 endpoint corrective action plan. Tier 1 endpoint is the application of generic tier 1 levels that are protective of human health and the environment.

Core Skills and Competencies

- Knowledge of provincial, federal and local laws and regulations applicable to remediation work.
- Knowledge of information sources relevant to the site that could affect remediation and reclamation success.
- Ability to prepare reports and documents as necessary, and review them to ensure accuracy, clarity and completeness.
- Knowledge of remediation/reclamation process and protocols.
- Ability to read and understand survey and map information.
- Knowledge of physical, chemical and biological processes and their interaction.
- Ability to select appropriate end land use and applicable environmental quality standards.
- Knowledge of application of appropriate buffers based on land use.

See sub-activity table on page 12 for further information.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in the field of applied science and technology or related field	8 years relevant experience

Certify Tier 2 Endpoint Corrective Action Plans

A qualified person is required to certify a tier 2 endpoint corrective action plan. Tier 2 endpoint is the site-specific adjustments to the tier 1 levels that accommodate unique site characteristics.

Core Skills and Competencies

- Knowledge of provincial, federal and local laws and regulations applicable to remediation work.
- Knowledge of information sources relevant to the site that could affect remediation and reclamation success.
- Ability to prepare reports and documents as necessary, and review them to ensure accuracy, clarity and completeness.
- Knowledge of remediation/reclamation process and protocols.
- Ability to read and understand survey and map information.
- Knowledge of physical, chemical and biological processes and their interaction.
- Knowledge of pathways and receptors.
- Ability to select appropriate end land use and applicable environmental quality standards.
- Knowledge of principles to eliminate pathway and exposure scenarios in accordance with the standard.

See sub-activity table on page 12 for further information.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in the field of applied science and technology or related field	8 years relevant experience

Certify Tier 3 Endpoint or a Risk Management with Future Reclamation Corrective Action Plan

A qualified person is required to certify a tier 3 endpoint or a risk management with future reclamation corrective action plan. Tier 3 endpoint or risk management with future reclamation is developed from a site-specific ecological and/or human health risk assessment.

Core Skills and Competencies

- Knowledge of provincial, federal and local laws and regulations applicable to remediation work.
- Knowledge of information sources relevant to the site that could affect remediation and reclamation success.
- Ability to prepare reports and documents as necessary, and review them to ensure accuracy, clarity and completeness.
- Knowledge of remediation/reclamation process and protocols.
- Ability to read and understand survey and map information.
- Knowledge of physical, chemical and biological processes and their interaction.
- Knowledge of pathways and receptors.
- Ability to select appropriate end land use and applicable environmental quality standards.
- Knowledge of principles to eliminate pathway and exposure scenarios in accordance with the standard.

- Apply toxicological and risk assessment principles to conduct a Human Health Risk Assessment in accordance with the standard.
- Apply toxicological and risk assessment principles to conduct an Ecological Risk Assessment in accordance with the standard.
- Apply toxicological, geo-environmental and chemical principles to derive site specific criteria in accordance with the standard.

See sub-activity table below for further information.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience

Sub-Activity within Corrective Action Plan (for information only)

Activity	Required Skills/Competencies
Design corrective action plan - general	Ability to identify the contaminants of potential concern (COPC), and their potential sources, pathways and receptors.
Design corrective action plan - choose reclamation technologies	Use appropriate scientific and or engineering principles and knowledge to select appropriate reclamation technology in accordance with the standard.
Design corrective action plan - develop post reclamation confirmatory sample plan	<ul style="list-style-type: none"> • Ability to identify the COPC, and their potential sources, pathways and receptors. • Knowledge of appropriate field screening methods for COPCs. • Knowledge of sample techniques for soils, sediments, ground and surface water, particulates and atmospheric sampling (indoor and outdoor). • Knowledge of statistics and sampling theory to ensure numbers and locations of samples are representative. • Knowledge of appropriate quality assurance and quality control (QA/QC) procedures in sampling and requirements for submission of samples. • Knowledge of remote sensing techniques and application. • Knowledge of geographic information systems (GIS) and geomatics. • Knowledge of lithology and surficial geology to conduct geological site characterizations. • Knowledge of sampling techniques for biota.
Submit corrective action plan	<ul style="list-style-type: none"> • Knowledge of the requirements for submission of a corrective action plan.
Execute corrective action plan - monitor and implement reclamation technology	<ul style="list-style-type: none"> • Knowledge of appropriate QA/QC procedures for reclamation technology. • Applied knowledge of installation, operation and maintenance requirements of reclamation technologies.

Activity	Required Skills/Competencies
Execute corrective action plan - collective confirmatory samples	<ul style="list-style-type: none"> • Applied knowledge of construction and installation of monitor wells. • Applied knowledge of appropriate field screening method for COPCs. • Applied knowledge of atmospheric sampling equipment. • Applied knowledge of sediment sampling equipment. • Applied knowledge of ground and surface water sampling equipment. • Applied knowledge of surficial soil sampling techniques. • Applied knowledge of logging test holes. • Applied knowledge of applicable use of geophysical monitoring. • Applied knowledge of collecting subsurface samples from applicable equipment. • Applied knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples. • Applied knowledge of sampling techniques for biota.
Execute corrective action plan - prepare closure report	Interpret and evaluate data and assess endpoint achievement.
Develop risk management with future reclamation - prepare corrective action plan	See requirement for corrective action plan.
Develop risk management with future reclamation - develop risk management plan	Design and develop appropriate monitoring: ground and surface water, soils and sediments, indoor air quality, atmospheric sampling employing appropriate predictive models: vapour intrusion, groundwater movement, subsurface contaminant transport.
Develop risk management with future reclamation - establish administrative controls	Knowledge of appropriate administrative controls.
Submit reclamation technology for accepted solution	Use applicable science and engineering knowledge to evaluate proposed technology.
Submit reclamation technology for alternative solution - submission of an environmental protection plan	Ability to evaluate alternative solution technologies to meet the results-based objectives for a proposed corrective action Plan.

Certify Laboratory Analysis

A qualified person is required to certify laboratory analysis. Where selected endpoints have been achieved and laboratory analysis is provided to the ministry to confirm endpoints, it is important that the analysis was done with proper quality assurance and quality control procedures.

Core Skills and Competencies

- Knowledge of technological developments in analytical procedures.
- Knowledge of provincial, federal and local laws and regulations applicable to analytical procedures.
- Knowledge of analytical techniques, equipment, procedures, sampling techniques, methods of statistical analysis and data processing.
- Knowledge of quality assurance and quality control procedures.
- Knowledge of management principles.
- Ability to recognize abnormal analytical results and determine appropriate corrective action conventional quality assurance/quality control practices.
- Ability to perform analytical procedures.
- Ability to plan, organize, direct, coordinate, and review the work of laboratory personnel.
- Ability to analyze, interpret and effectively apply laboratory results.
- Ability to read, interpret and apply pertinent regulations.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in chemistry, other natural sciences or related field	4 years relevant experience with one of those years in <i>DRC</i>
Hold a diploma or certificate in chemistry, applied science and technology or related field	8 years of relevant experience with one of those years in <i>DRC</i>

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.

- Knowledge of surficial soil sampling techniques.
- Knowledge of logging test holes.
- Knowledge of applicable use of geophysical monitoring.
- Knowledge of collecting subsurface samples from applicable equipment.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of sampling techniques for biota.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Site Assessment Chapter

Certify Environmental Protection Plan

A qualified person is required to certify an environmental protection plan (alternative solution) to ensure safety to the public and the environment.

Core Skills and Competencies

Conduct Site Assessment

- Ability to conduct site visits.
- Ability to conduct interviews.
- Ability to view and interpret aerial photographs.
- Ability to conduct historical record searches: land titles, tax assessment, and property use directories.
- Knowledge of public and government databases.
- Ability to review and interpret existing documentation, previous environmental site assessments, previous geological and geotechnical reports.

Develop Sample Plan

- Ability to identify the contaminants of potential concern (COPC), and their potential sources, pathways and receptors.
- Knowledge of appropriate field screening methods for COPCs.
- Knowledge of sample techniques for soils, sediments, ground and surface water, particulates and atmospheric sampling (indoor and outdoor).
- Knowledge of statistics and sampling theory to ensure numbers and locations of samples are representative.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of remote geophysical sensing techniques, and application.
- Knowledge of geographic information systems (GIS) and geomatics.
- Knowledge of lithology and surficial geology to conduct geological site characterizations.
- Knowledge of sampling techniques for biota.

Plan and Execute Site Investigation

- Applied knowledge of monitoring well construction and installation.
- Applied knowledge of appropriate field screening method for COPCs.
- Applied knowledge of atmospheric sampling equipment.
- Applied knowledge of sediment sampling equipment.
- Applied knowledge of ground and surface water sampling equipment.
- Applied knowledge of surficial soil sampling techniques.
- Applied knowledge of logging test holes.
- Applied knowledge of applicable use geophysical monitoring.
- Applied knowledge of collecting sub surface samples from applicable equipment.
- Applied knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Applied knowledge of sampling techniques for biota.

Chemical Analysis

- Applied knowledge of applicable of analytical chemistry and methods.

Evaluate and Interpret Data

- Ability to evaluate and interpret drillers' logs.
- Ability to evaluate and interpret complex chemical analytical data from all media.
- Ability to evaluate and interpret groundwater information.
- Ability to evaluate and interpret contaminant transport.
- Ability to evaluate and interpret hydrological and hydrogeological information.
- Ability to evaluate and interpret soil gas data for vapour intrusion.
- Ability to evaluate and interpret biotic sampling results.
- Ability to evaluate and interpret potential for impacts to receptors both on and off-site.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in the field of applied science and technology or related field	8 years relevant experience

Certify CAN/CSA Z769-00 (R2013) – Phase II Environmental Site Assessment Report

A qualified person is required to certify a CAN/CSA Z769-00 (R2013) – Phase II Environmental Site Assessment to ensure the requirements of this document are met.

Core Skills and Competencies

- Same as core skills and competencies for environmental protection plan above.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in the field of applied science and technology or related field	8 years relevant experience

Complete a Visual Site Assessment

A qualified person is required to complete a visual site assessment to ensure the information being provided to the ministry is accurate and reliable.

Core Skills and Competencies

- Ability to use existing data sources and information to assess site conditions and complete the Visual Site Assessment Form.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's degree in science or a diploma in applied science or engineering technology from a post-secondary institution	none

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.
- Knowledge of surficial soil sampling techniques.
- Knowledge of logging test holes.
- Knowledge of applicable use of geophysical monitoring.
- Knowledge of collecting subsurface samples from applicable equipment.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of sampling techniques for biota.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Hydrostatic Testing Chapter

Certify Environmental Protection Plan

A qualified person is required to certify an environmental protection plan (alternative solution) to ensure safety to the public and the environment.

Core Skills and Competencies

- Ability to plan, design, evaluate, advise about, and report about, through the application of engineering principles, an environmental protection plan for the collection, transport, handling, treatment, disposal, monitoring, and reporting of source water and hydrostatic test water that safeguards life, health, property, economic interests, the public interest, or the environment

Sub-Activity within Environmental Protection Plan (for information only)

Activity	Required Skills/Competencies
Evaluate hydrostatic test water disposal	A qualified person shall have the skills and competencies to evaluate the environmental and health implications of disposing hydrostatic test water at a variety of possible disposal locations.
Protect surface water	If there exists a risk to surface water associated with the activity, then a qualified person shall have the skills and competencies to assess the quality of the surface water, project and evaluate the potential impacts to the surface water, and design mitigation and protection approaches for the surface water.
Assess groundwater	If there exists a risk to groundwater associated with the activity, then a qualified person shall have the skills and competencies to assess the quality of the groundwater, project and evaluate the potential impacts to the groundwater, and design mitigation and protection approaches for groundwater.
Assess soil	If there exists a risk to soil associated with the activity, then a qualified person shall have the skills and competencies to assess the composition and quality of the soil, project and evaluate the potential impacts to the soil, and assess the sustainability of the proposed activity on the soil.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in the field of applied science and technology or related field	8 years relevant experience

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.
- Knowledge of surficial soil sampling techniques.
- Knowledge of logging test holes.
- Knowledge of applicable use of geophysical monitoring.
- Knowledge of collecting subsurface samples from applicable equipment.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of sampling techniques for biota.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Industrial Source (Air Quality) Chapter

Certify Environmental Protection Plan

A qualified person is required to certify an environmental protection plan (alternative solution) to ensure safety to the public and the environment as new and innovative ideas are proposed in these plans.

Core Skills and Competencies

- Ability to plan, design, evaluate, advise about, and report about, through the application of sound engineering principles, an environmental protection plan for the collection of air monitoring, dispersion modelling, stack testing, treatment and reporting of air quality that protects life, health, property, economic interests, the public interest and the environment.

Sub-Activity within Environmental Protection Plan (for information only)

Activity	Required Skills/Competencies
Evaluate air quality	A qualified person shall have the skills and competencies to evaluate the composition, quality, health risks, and environmental risks of air quality.
Conduct air monitoring	A qualified person shall have the skills and competencies to design and report on continuous or passive air monitoring systems.
Conduct dispersion modeling	A qualified person shall have the skills and competencies to conduct dispersion modelling.
Conduct stack testing	A qualified person shall have the skills and competencies to carry out and report on stack testing results.
Design air pollution control systems	A qualified person shall have the skills and competencies to design air pollution control systems.
Assess storage and disposal	A qualified person shall have the skills and competencies to evaluate the environmental and health implications of disposing collected particulate matter, dust or other material at a variety of possible storage or disposal locations.
Assess soil	If there is a potential risk to soil associated with the activity, then a qualified person shall have the skills and competencies to assess the composition and quality of the soil, project and evaluate the potential impacts to the soil, and assess the sustainability of the proposed activity on the soil.
Assess groundwater	If there exists a risk to groundwater associated with the activity, then a qualified person shall have the skills and competencies to assess the quality of the groundwater, project and evaluate the potential impacts to the groundwater, and design mitigation and protection approaches for groundwater.
Protect Surface water	If there exists a risk to surface water associated with the activity, then a qualified person shall have the skills and competencies to assess the quality of the surface water, project and evaluate the

	potential impacts to the surface water, and design mitigation and protection approaches for the surface water.
Assess odour	If there is a potential risk of odour associated with the activity, then a qualified person shall have the skills and competencies to evaluate the odour and design mitigation approaches.
Assess public nuisance	If there exists a risk of public nuisance associated with the activity, then a qualified person shall have the skills and competencies to evaluate and design mitigation approaches to minimize the exposure of the public nuisance.
Conduct cost benefit analysis	A qualified person shall have the skills and competencies to compare and evaluate the economic costs and benefits of a variety of air pollution abatement and treatment options.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.
- Knowledge of surficial soil sampling techniques.
- Knowledge of logging test holes.
- Knowledge of applicable use of geophysical monitoring.
- Knowledge of collecting subsurface samples from applicable equipment.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of sampling techniques for biota.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Sewage Main Chapter

Certify Environmental Protection Plan

A qualified person is required to certify an environmental protection plan (alternative solution) to ensure safety to the public and the environment.

Core Skills and Competencies

- Ability to plan, design, evaluate, advise about, and report about, through the application of engineering principles, an environmental protection plan for the siting, designing, construction, altering, extending and commissioning of sewage mains that safeguards life, health, property, economic interests, the public interest, and the environment.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience

Certify Sewage Main Design Plan

A qualified person is required to certify a sewage main design plan to ensure the plan meets good engineering practices.

Core Skills and Competencies

- Ability to design sewage piping systems including evaluation of protection of human health safety and the environment, design life, capacity, layout of physical works, materials, physical integrity, economics, climatic conditions and maintenance.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	8 years relevant experience

Certify Monitoring and Commissioning Requirements

A qualified person is required to certify monitoring and commissioning requirements to ensure the sewage main meets design criteria prior to putting it into service.

Core Skills and Competencies

- Ability to test sewage piping systems including pressure testing and quality testing.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary.

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 year relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 year relevant experience

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.
- Knowledge of surficial soil sampling techniques.
- Knowledge of logging test holes.
- Knowledge of applicable use of geophysical monitoring.
- Knowledge of collecting subsurface samples from applicable equipment.
- Knowledge of appropriate QA/QC procedures in sampling and requirements for submission of samples.
- Knowledge of sampling techniques for biota.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Water Main Chapter

Certify Environmental Protection Plan

A qualified person is required to certify an environmental protection plan (alternative solution) to ensure safety to the public and the environment as new and innovative ideas are proposed in these plans.

Core Skills and Competencies

- Ability to plan, design, evaluate, advise about, and report about, through the application of engineering principles, an environmental protection plan for the siting, designing, construction, altering, extending and commissioning of water mains that safeguards life, health, property, economic interests, the public interest, and the environment.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience

Certify Water Main Design Plan

A qualified person is required to certify a water main design plan to ensure the plan meets good engineering practices.

Core Skills and Competencies

- Ability to design water piping systems including evaluate the quality and health risks of water used or intended to be used for human consumption, design life, capacity, layout of physical works, materials, physical integrity, economics, climatic conditions and maintenance.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary.

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	4 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	8 years relevant experience

Certify Monitoring and Commissioning Requirements

A qualified person is required to certify monitoring and commissioning requirements to ensure the water main meets design criteria prior to putting it into service.

Core Skills and Competencies

- Ability to test water piping systems including pressure testing and quality testing.

Education and Experience Requirements

Generally, the following education and experience requirements are necessary:

Education	Experience
Hold a Bachelor's, or higher, degree in science, medicine, engineering or related field	2 years relevant experience
Hold a diploma or certificate in chemistry, applied science and technology or related field	2 years relevant experience

Certify Quality Assurance and Quality Control Sampling and Analytical Procedures

A qualified person is required to certify quality assurance and quality control sampling and analytical procedures. Certifying quality assurance and quality control sampling and analytical procedures is used where no standard-setting organization (i.e.: CSA, ASTM, USEPA) method exists and the qualified person is needed to certify that the quality assurance and quality control sampling and analytical procedures used produce accurate, precise and reliable results.

Core Skills and Competencies

- Knowledge of construction and installation of monitor wells.
- Knowledge of appropriate field screening method for potential substances of concern.
- Knowledge of atmospheric sampling equipment.
- Knowledge of sediment sampling equipment.
- Knowledge of ground and surface water sampling equipment.
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Education and Experience Requirements

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