

The logo for 'eco canada' features the word 'eco' in a lowercase sans-serif font, followed by a stylized graphic of a tree with three branches, and then the word 'canada' in a lowercase sans-serif font.

eco canada

A single, bright yellow maple leaf is held by a hand at the bottom of the frame. The leaf is the central focus, with its veins clearly visible. The background is a soft-focus bokeh of green and yellow light spots.

# Competencies for Environmental Professionals in Canada

NATIONAL OCCUPATIONAL STANDARDS

August 2016



## About ECO Canada

Since 1992, ECO Canada has been committed to supporting Canada's environmental sector through in-depth labor market research, professional certification, career development resources and training. We strive to be Canada's leading environmental certification, establishing the professional standard and code of ethics for the environmental workforce. We are committed to excellence as we nurture a vibrant community of experienced environmental professionals. To learn more, please visit [www.eco.ca](http://www.eco.ca).

## Acknowledgments

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## GLOSSARY

**Competency:** a demonstrated behaviour originating from the application of one's knowledge, skills, and attributes (KSA's) to the task at hand; expresses what must be done consistently to produce the intended results.

**Competency Dictionary:** the set of all statements that describe related competencies critical for effective performance within a specific context (for NOS, either technical competencies or transferable competencies)

**Competency Profile:** a subset of all competencies in the dictionary that apply to a particular ECO subsector or role.

**Core Knowledge:** broadly describes the knowledge that an environmental professional needs to function successfully in the workplace.

**Discipline-Plus (+) Concept:** environmental competence is understood to be "discipline +" as it is usually founded on formal education and training in a specific discipline (e.g., chemistry, biology, engineering, etc.), and then supplemented by multi-disciplinary work, experience and/or professional training.

**KSA:** knowledge, skills and attributes; they are qualities that, together, demonstrate professional competencies.

**National Occupational Standards for Environmental Employment, or NOS:** a set of standards developed by ECO Canada tailored specifically to excellence in the Canadian environmental employment sector.

**Task:** an activity that produces a measureable result.

**Technical Competency:** describe the demonstrated ability to perform a task or series of tasks to the satisfaction of the employer or otherwise established norms.

**Transferable Competency:** describe the behaviours or soft skills that contribute to the successful performance of various technical tasks; they relate to how the job is accomplished and can be applied in many unrelated roles.

**Sector/Subsector Model for Environmental Employment:** a model which groups related areas of environmental work together and shows how they are inter-related; it is a visual representation of the multi-disciplinary nature of environmental work.

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## INTRODUCTION

Since the 1990s, ECO Canada (“ECO”) has operated under a mandate to ensure an adequate supply of people with the skills and knowledge to meet the human resource needs of the Canadian environmental sector.

A key part of ECO’s activity has involved developing National Occupational Standards (“NOS”) for environmental work. The NOS have many applications including certifying qualified environmental workers with the Environmental Professional (“EP”) certification.

Over the years, new technologies and new economic priorities have arisen, bringing about evolution in the nature of environmental work. ECO monitors the NOS to ensure that the standards continue to evolve as well and stay aligned with environmental work.

This current report is an update to an earlier equivalent report published in March 2011<sup>1</sup> and available on the ECO website<sup>2</sup>. Since the 2011 publication, ECO has engaged with over 750 environmental professionals through formal surveys and less formal means, as well as monitored the use of the NOS in ongoing certification work. The result is the current document with NOS standards current as of August 2016.

Minor changes to the NOS are sometimes made between report publications; interested parties can check to ensure they have the current version by contacting [research@eco.ca](mailto:research@eco.ca).

The purpose of this current document is solely to present the NOS together with any classification information needed to understand the standards. Persons wanting a more comprehensive look at the broad environmental employment framework are referred to a separate document titled: *“Framework: Environmental Employment, National Occupational Standards and Certification. ECO Canada, a Working Paper”* and available on the ECO website<sup>3</sup>. Additional material addressed in the separate Framework document and not covered in this current document includes,

- A history of the development of the entire ECO framework,
- The conceptual development of “discipline +” theory and competencies,
- More on applications of the NOS, including information on scoring for certification, and
- A look at possible future directions and evolution of standards for environmental work.

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<sup>1</sup> *Competencies for Environmental Professionals in Canada. NATIONAL OCCUPATIONAL STANDARDS. March 2011.*

<sup>2</sup> [www.eco.ca/research/](http://www.eco.ca/research/)

<sup>3</sup> [www.eco.ca/research/](http://www.eco.ca/research/) Publication scheduled for October 2016

## THE CONCEPTS

### The Scope: Definition of Environmental Employment

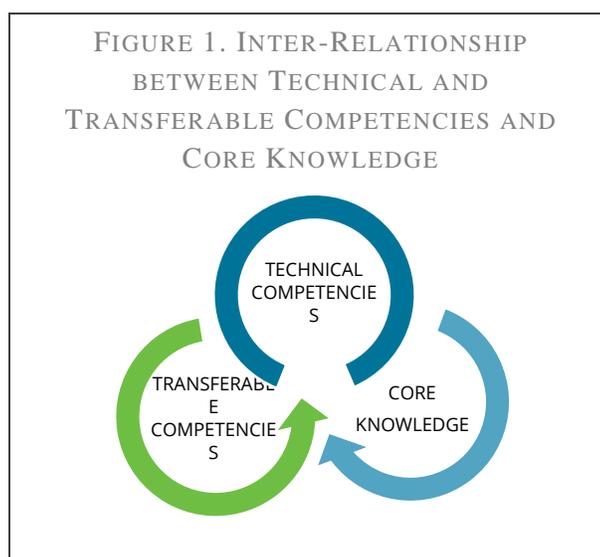
“Environmental employment” can be understood in several ways. In its early days, ECO considered several approaches in order to identify the one which would bring best value to the full spectrum of Canadian environmental management, of employers, of professionals and of academic institutions. Ultimately, ECO arrived at a skills-based approach which defines environmental employment as work which **PROTECTS** and/or **MANAGES** and/or **SUSTAINS** the environment.

A major advantage to this approach is that it captures employment which affects the environment independently of the industry of the employer. Alternative approaches to defining environmental employment, usually product-based or industry-based, are limiting and may understate employment numbers involved directly with the environment.

## The Building Blocks: Competencies – Knowledge, Skills and Attributes

The fundamental building block of the NOS is the “competency”. ECO understands a competency to be a *demonstrated skill in the service of a task to produce results*. Competencies originate from the application of Knowledge, Skills and Attributes (“KSA”s); they express what is done consistently to produce the intended result.

ECO standards are based on two sets of competencies and one set of broad knowledge areas. Figure 1 illustrates the three components.



ECO research and certification are built primarily on the set of **332 technical competencies**. Technical competencies describe the universe of **work tasks directly related to Protecting, Managing and Sustaining the environment**. For example, *Develops a project management plan for the impact assessment study* is a technical competency.

While the **42 transferable competencies** are not directly entered into certification, ECO has developed them to assist employers and employees. Transferable competencies describe “soft skills” which contribute to the successful performance of technical work; they are called “transferable” because they apply to any workplace. For example, *Makes decisions in a timely manner, committing to a course of action that considers pertinent data, information, options and implications* is a transferable competency.

ECO does not directly measure Knowledge requirements (except as they are implied in the technical and transferable competencies). To assist employers and employees, ECO has prepared a **list of 12 broad areas of awareness** shared commonly by environmental workers. For example, *Current global environmental trends, challenges, concerns and solutions* is an area of knowledge.

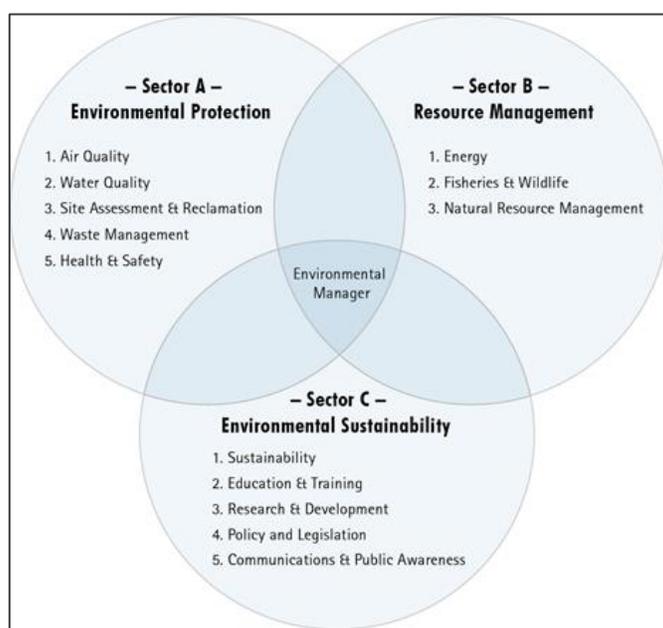
## The ECO Sector/Subsector Model

While the breadth of the definition of environmental employment as that which protects, manages and/or sustains the environment has real advantages, there are practical problems in applying it unless more classification is imposed. The large numbers of competencies becomes unwieldy without meaningful classification.

The key layer of classification is the ECO Sector/Subsector model, illustrated in Figure 2.

The Model opens with Sectors based on the three overall purposes of environmental employment, that is, A. Protection, B. Management and C. Sustainability. Moving down, each Sector consists of from three to five Subsectors which define theatres of action within which environmental professionals work. In the centre is the Environmental Manager whose role relates to all three Sectors and their subsectors.

FIGURE 2. THE 2016 ECO SECTOR MODEL FOR ENVIRONMENTAL



In practice, most environmental professionals work within more than one subsector. However, the distinction from one subsector to another makes it easier for ECO to create valid NOS for the different areas. Although there is some overlap, the subset of technical competencies required for each of the 14 subsectors is unique; each subsector has a distinct profile of technical competencies.

The ECO Sector/Subsector model is an essential component of ECO labour market research and the EP certification.

## Categories and Subcategories – Further refinement

ECO has produced a second layer of competency classification based on functionality.

**Technical competencies** are further divided into **Categories (and Subcategories if the category is very wide) based on the specific intent or function of the task.** The Categories (and possibly Subcategories) may be found in many of the subsectors. For example, *Environmental and Social Impact Assessment* is a category for which technical competencies will appear across several subsectors.

**Transferable competencies** are further divided into **Categories based on clustering of like competencies.** For example, *Critical Thinking/Judgement* is a cluster of transferable competencies.

## STANDARDS AND RELATED

### ECO CANADA – Definition of Environmental Employment

#### ECO CANADA - ENVIRONMENTAL EMPLOYMENT

Involves the performance of activities that seek to manage sustainable use of resources, assess or minimize environmental impacts, and maintain or restore ecological integrity of the environment. These activities relate to planning, implementing and/or managing environmental initiatives, programs, products or services, and/or developing and disseminating environmental knowledge and awareness.

### ECO Sectors/Subsectors – Descriptions

#### SECTOR A: ENVIRONMENTAL PROTECTION

Sector A involves activities aimed at protecting the health of humans and the ecosystem through pollution prevention, waste minimization, remediation, rehabilitation, and reclamation in the areas of air, water and land. Functions performed in this sector involve the measurement, maintenance, protection, and restoration of environmental quality. Sector A also includes human health and safety, where these are dependent on quality of the environment.

**A1. Air Quality** involves the supply of goods and services for assessing the state of the atmosphere.

Main functions may include:

- Monitoring of air quality and development of related equipment;
- Air pollution management systems and technologies;
- Development of legislation, guidelines, regulations, and standards;
- Air quality assessment, testing and monitoring;
- Risk assessment;
- Application and use of air emissions standards; and
- Air quality compliance monitoring, indoor air evaluation, impact assessment modelling and meteorological studies.

For some working in this area, functions may also include:

- Predicting and/or measuring greenhouse gas (GHG) emissions from a source;
- Assessment of the impacts of an activity on climate change; and
- Reducing or mitigating the impacts of climate change.

**A2. Water Quality** involves the protection of water quality and quantity for humans and aquatic life and water pollution control (including groundwater, surface water, drinking water, and wastewater).

Main functions may include:

- Research and analysis on water quality and quantity;
- Compliance monitoring and permitting;
- Development of legislation, guidelines, regulations, and standards;

- Site characterization, impact assessments and/or remediation related to water quality and quantity;
- The design and operation of water and wastewater treatment plants and storm water management facilities and low impact development technologies; and
- Assessments to support the planning and design process of water, storm water, wastewater, infrastructure, and natural water course flood, erosion and other land drainage issues.

**A3. Site Assessment & Reclamation** involves site characterization, remediation, restoration, rehabilitation, and/or reclamation of disturbed or contaminated sites. The aim is to determine/evaluate the presence and levels of contamination and to remove or manage the contamination; ultimately, to render the land back to its original use or an equivalent capability.

Main functions may include:

- Prevention and control of land pollution and soil and/or groundwater contamination;
- Interpretation of historical site information (phase I ESA);
- Site characterization (phase II ESA) and management planning;
- Sampling and analysis of soil and vapour, vegetation, and groundwater; including materials for testing mechanical, biological, and chemical properties;
- The study of landforms and drainage;
- Obtaining necessary clean-up permits and approvals;
- Regulatory compliance monitoring and the development of legislation, guidelines, regulations and standards;
- Assessing and managing risk;
- Erosion control;
- Developing and performing pre-planned or reactionary techniques to deal with disturbances or contaminants in an environmental sound manner to attain required ecosystem function and structure; and
- Site decommissioning.

**A4. Waste Management** involves the collection, diversion (reduction, reuse, recycling, refinement and energy recovery), and/or disposal (characterization, control, compliance, and treatment) of hazardous and non-hazardous waste.

Main functions may include:

- Managing the end use of waste streams;
- Managing the treatment of beneficial reuse of hazardous and non-hazardous wastes;
- Design of waste related facilities;
- Leachate control;
- Implementation of methane control systems;
- The development, enforcement or interpretation of legislation, guidelines, regulations and standards related to waste management;
- Design and/or execution of collection systems, and/or implementing programs for their management;
- Waste streams audits; and
- Performing life cycle assessments.

**A5. Environmental Health & Safety** involves the development and implementation of policies, standards, guidelines, legislation and programs that aim to maintain and improve the quality of the environment and health and safety of workers and the community.

Main functions may include:

- Facility assessment and product stewardship;
- Compliance monitoring, including inspections and auditing;
- Health and safety risk assessment and the anticipation, recognition, evaluation, and control of OHS hazards;
- Conducts or oversees industrial or occupational hygiene assessments;
- The development of policies, guidelines, programs, and technical standards;
- Emergency response guidelines;
- Workplace health and safety programs;
- Advising senior management/leadership on environmental health risks and responsibilities; and
- Stakeholder consultations and communications.

## SECTOR B: RESOURCE MANAGEMENT

Sector B involves activities aimed at integrating environmental and economic decisions with principles of stewardship in the use of natural resources. Functions performed in this sector involve the sustainable use of fish, wildlife and natural resources. Sector B deals with integrating biological and ecological aspects of the environment with the social and economic needs of society.

**B1. Energy** involved the provision of energy commodities and services in a manner that considers how extraction, refinement, transmission, and end use are managed.

Main functions may include:

- Project planning; including pre-development environmental assessment and mitigation;
- Obtaining environmental approvals and/or licensing;
- Environmental management for established energy operations;
- Assessment and control of waste and environmental hazards;
- Internal and external liaising for environmental performance, including community consultation and partnerships;
- Facilitating the process of construction, site reclamation or decommissioning;
- Research and development for energy efficiency; including new sources of energy, energy storage, and energy transmission; and
- Creating sustainable development plans that relate to the overall management strategies of their organizations, including alternative sources of energy.

**B2. Fisheries & Wildlife** involves work for or with companies and organizations that manage and/or are concerned with the use and preservation of species and their habitats.

Main functions may include:

- Research on fish and wildlife populations, species at risk, ecosystems (wetlands and other sensitive areas), biodiversity and ecosystem processes, and conservation, mitigation and preservation practices;
- Preparation and/or distribution of reports, peer reviewed papers and/or presentations related to aquatic and terrestrial ecosystems;
- Conducting specific field surveys to identify fish and wildlife issues, species at risk and environmental sensitive and ecologically important areas;
- Monitoring the presence of fish and wildlife species, their populations, densities and trends, in addition to determining habitat availability, quality and required ecological needs;
- Conservation, mitigation and preservation of fish and wildlife;
- Knowledge of and adherence to fish and wildlife regulations; and
- Technical and analytical support for fishery and wildlife management.

**B3. Natural Resource Management** involves balancing human needs and pressures reflected through industries such as tourism, agriculture, forestry, mining, oil and gas, and urban development with the conservation and preservation of natural resources and the flora/fauna and other living organisms within them.

Main functions may include:

- Integrating socio-economic, cultural and environmental factors to support and evaluate the ecological health of the planet, thereby enabling society' sustainable development;
- Strategic planning, development, implementation and application of environmental practices and policies;
- Integrated land use planning and sustainable planning related to the flora and fauna;
- Work with freshwater and marine aquatic systems;
- Protecting ecosystems and conserving their resources;
- Planning and managing park operations, including eco-tourism, public education and the establishment and maintenance of infrastructure;
- Being involved in the regulatory compliance of the use of natural resources and reserves; and
- Developing public and aboriginal engagement to incorporate cultural and social needs and concerns.

## SECTOR C: ENVIRONMENTAL SUSTAINABILITY

Sector C involves activities aimed at promoting a healthy environment, for the benefit of society, now and into the future. These activities centre on developing, disseminating and applying knowledge in support of Sectors A and B. Functions performed in this sector include stakeholder engagement, addressing the ethical implications of activities impacting the environment, capacity-building through the application of intellectual innovation, communication, or public policy in order to balance human needs with a sustainable planet.

**C1. Sustainability** involves the provision of strategic advice on matters of sustainability to protect environmental integrity and social justice, while creating economic value. Sustainability professionals aim to promote biodiversity or manage ecosystems' health and integrity, and to support a sustainable use of resources.

Main functions may include:

- Monitoring and reporting sustainability trends over time;
- Developing and using sustainability indicators to increase the quality of data used for decision making;
- Sustainability planning at the community, business, municipal, provincial, national, or international level;
- Educating others on ethical and social concerns and guidelines relevant to achievement of sustainability objectives;
- Developing environmental/sustainability management and other forecasting/back casting systems;
- Activities such as change management, strategic development, economic assessment, and achieving corporate social responsibility; and
- At the global level, promoting sustainable societies in which integrates environmental, social, and economic systems are developed and evolve over the long-term.

**C2. Education & Training** involves being responsible for either the development of an environmental curriculum and its measurement and/or for the delivery of a curriculum. Educational training includes formal education, on-the-job training and continuing professional development training.

Main functions may include:

- Assessment of the need for environmental education programs;
- Development or review and assessment of environmental education curricula that may stress the cross-disciplinary nature of environmental work and emerging areas;
- Delivery of environmental education including outreach activities, for the purpose of public awareness and education;
- Identifying learning outcomes and competencies and designing curricula to promote them; and
- Measurement of the outcomes of environmental education.

**C3. Research & Development** involves the support and promotion of scientific study to advance the practical application of knowledge to the environmental sector.

Main functions may include:

- Development and advancement of environmental knowledge through the process of peer-review;
- Making scientific data or knowledge available that may assist in the prevention, improvement or resolution of environmental problems; and
- Providing data or knowledge aimed at facilitating long-term economic, social, and/or environmental benefits.

**C4. Policy & Legislation** involves enabling positive practice and results through the formulation and enforcement of public and corporate policy, legislation, regulations and standards.

Main functions may involve:

- Identifying, engaging and consulting with key stakeholders on issues and information related to the protection of the environment; social, cultural, economic and environmental sustainability;
- Providing awareness and advice on or developing environmental legislation and regulation;
- Collecting, synthesizing, analyzing, and interpreting information and data to support policy and planning programs;
- Supporting and informing decision makers, as well as compliance officers;
- Identifying opportunities for improved regulations and guidelines in environmental protection;
- Assessing and mitigating risks;

- Planning and advising organizations about means of complying with policies, legislation, regulations, and standards; and
- Prosecution for environmental infractions.

**C5. Communications & Public Awareness** involves the use of all forms of publications and communications, including printed and electronic media, to exchange information about environmental issues, responsibilities, conservation, and preservation practices, or corporate environmental performance.

Main functions may include:

- Preparation of written, audio-visual and electronic communications;
- Organization, coordination and presentation of expert information on environmental matters at conferences, clinics, and/or gatherings of stakeholders and policy makers;
- Developing environmental awareness and action programs;
- Implementing public relations and communication strategies on environmental issues; and
- Simplifying scientific, technical or legal environmental matters for the general public.

## **CORE: ENVIRONMENTAL MANAGER**

While not technically a “subsector”, the environmental manager role at the heart of the sectors has a unique certification speciality with a unique profile. Environmental managers have a broad knowledge of all functions/activities within the sector model at the level of oversight, not at a technical, “on-the-ground” level.

**Environmental Managers** are involved in providing leadership, accountability and direction in the environmental disciplines of their organizations and/or organizations for which they provide environmental services. The work is integrative in nature with a focus on systems thinking, the integration of knowledge, professional ethics, and strategic decision making in the management of environmental and social issues.

Main functions may include:

- Management of environmental projects and/or the supervision of other professionals;
- Broad understanding of regulatory requirements and international standards and anticipating the future impacts of proposed legislation and regulation;
- Knowledge of how economic, social, environmental and operational factors can impact projects;
- Expert consultation within the organization and with clients, other professionals and the general public; and
- Application of baseline environmental technical expertise and/or knowledge, complemented with ad-hoc multi-disciplinary training in the social sciences, business, finance, project and human resource management.

## Core Knowledge Areas – List

### National Occupational Standards for Environmental Employment 2016 Core Knowledge

1. Environmental science, technology and terminology
2. Human activities and their relationship to and impact on the environment
3. The value of protecting, conserving and restoring natural resources
4. Current global environmental trends, challenges, concerns and solutions
5. Specific environmental concerns, such as: biodiversity, species at risk, population growth demand for and consequences of water resource utilization, energy and material production and use, air, land and water pollution, consequences of pollution, climate change
6. Human response to environmental concerns, such as: environmental impact assessment, risk-based management, sustainability, sustainable development, and energy efficiency
7. Canadian environmental business practices
8. Environmental legislation and agreements relevant to their organization
9. The purpose and functionality of environmental management systems
10. Environmental concerns of the public expressed through general knowledge, consultations and the political system
11. Awareness of ecosystem health principles and risks, like the interplay between the environment and health of the public, individuals and community.
12. A holistic view of the interconnectedness of the issues within the areas of practice in the environmental community, including the interconnectedness of culture and the environment.

## Transferable Competencies

### CATEGORIES OF TRANSFERABLE COMPETENCIES

Transferable competencies are sorted into the following categories (i.e., clusters):

• Professional Ethics & Work Style
• Learning & Creativity
• Communication Effectively
• Collaboration
• Critical Thinking and Judgement
• Planning and Organizing Work and Projects
• Leading and Influencing Others
• Business Acumen

### DICTIONARY OF TRANSFERABLE COMPETENCIES BY CATEGORY

ID #	National Occupational Standards for Environmental Employment 2016 Transferable Competency Dictionary
<b>Professional Ethics and Work Style</b>	
1	Maintains good standing in professional associations, practicing professional ethics and remaining current in practice requirements.
2	Demonstrates professional, ethical conduct, such as trust, integrity, confidentiality and discretion during the conduct of all work activities.
3	Demonstrates self-reliance, motivation and commitment in the conduct of day to day activities.
4	Demonstrates flexibility and creativity in the face of unusual or unexpected circumstances.
5	Cooperates willingly with others in dealing with changing situations, conditions, and expectations.
6	Demonstrates attention to detail to ensure the thoroughness and accuracy of work results.
7	Balances the need for 'attention to detail' with a focus on goals and objectives to achieve the desired outcomes.
8	Applies principles of quality assurance and scientific rigour in all work activities.
9	Stays current on the theory and practice pertinent to one's roles and responsibilities.
10	Integrates relevant data and information from a variety of disciplines/sources.
11	Continuously pursues personal learning and development opportunities to promote professional growth and development.
12	Uses creative approaches to develop innovative ways of working, new designs and technologies, and cost-effective solutions to technical and business challenges.
<b>Communicating Effectively</b>	
13	Prepares clear, well-formatted reports and other written communications that meet established protocols and are appropriate to the target audience.
14	Communicates clearly and respectfully using verbal and nonverbal language appropriate to the cultural and social context.
15	Uses effective interviewing techniques, including appropriate and respectful questioning, clarifying and listening skills, to elicit accurate and complete information.
16	Conveys technical information accurately, clearly and concisely, interpreting it appropriately and effectively for the target audience.
17	Uses appropriate content, graphics and format in oral presentations to address the specific needs of target audiences.

Collaboration	
18	Builds constructive networks inside and outside the organization to facilitate the accomplishment of results.
19	Builds strong relationships and trust with team members that make it possible to receive everyone's input and ideas, and maximize individual and team output and potential.
20	Works cooperatively with multiple stakeholders, demonstrating willingness to consider alternative approaches or ideas.
21	Deals effectively with confrontational situations, demonstrating diplomacy, tact, empathy and consideration for differing points of view.
22	Carries out independent primary, secondary and tertiary research to collect sufficient data and information pertinent to the area of inquiry.
23	Performs an objective and thorough analysis of information and data from multiple sources.
24	Distinguishes between facts, inferences and assumptions to establish the quality of the information collected and the reliability of its source.
25	Employs professional scepticism to assess the objectivity and reliability of assumptions and evidence asserted by a responsible party or client.
26	Makes decisions in a timely manner, committing to a course of action that considers pertinent data, information, options and implications.
Planning and Organizing Work and Projects	
27	Uses ICT (information communication technologies) as appropriate to manage work effectively and increase efficiency.
28	Manages multiple priorities through the selection and application of time and project management tools and approaches.
29	Develops work/project plans, identifying the work to be accomplished, the risk/contingencies that may arise, and how they will be addressed.
30	Coordinates resources (including financial, logistical, supplies, etc.) needed to implement work/project plans and achieve desired results.
Leading and Influencing Others	
31	Manages the work of others, including project teams, working groups and contractors.
32	Builds consensus and commitment to the team mandate, vision, goals, roles, responsibilities, and processes.
33	Facilitates solutions to barriers that affect individual, team and project performance.
34	Identifies the individual/and or team competencies that are required to accomplish work/project objectives and deliverables.
35	Mentors peers and team members to facilitate their technical competence and on-going professional development.
36	Creates an environment that promotes innovation, creativity and entrepreneurial thinking within the organization.
37	Navigates effectively through political and organizational complexities to avoid or overcome potential barriers to successful completion.
Business Acumen	
38	Analyzes relevant business trends, financial measures, economic factors and new regulations, assessing and articulating their impact on the organization.
39	Recognizes business threats and/or opportunities affecting their area of the business, recommending actions to address them.
40	Identifies clients' stated and underlying needs, and the work activities and methodologies that will best address these needs.
41	Translates the organization's vision and goals into relevant plans and actions, realigning work efforts with changes in organizational direction.
42	Drives the implementation of changes, tracking their impact to ensure organizational performance is improved or sustained.

## Technical Competencies

### CATEGORIES AND SUBCATEGORIES OF TECHNICAL COMPETENCIES

Technical competencies are sorted into the following categories and subcategories

NATIONAL OCCUPATIONAL STANDARDS FOR ENVIRONMENTAL EMPLOYMENT 2016 TECHNICAL COMPETENCIES CATEGORIZATION	
CATEGORY	SUBCATEGORIES
<b>A – Environmental Impact Assessment</b>	<b>A1</b> Conducting environmental impact assessments
<b>B – Site Assessment (RRR)</b>	<b>B2</b> Conducting environmental site assessments (ESA – Phase 1 and Phase 2)
	<b>B3</b> Developing/Implementing site remediation (Phase 3) plan
	<b>B4</b> Developing/implementing site restoration/reclamation (Phase 3) plans
<b>C – Regulatory &amp; Enforcement</b>	<b>C5</b> Interpreting/enforcing/complying with environmental regulations and standards
<b>D – Pollution Prevention, Abatement &amp; Control</b>	<b>D6</b> Implementing pollution prevention, abatement & control (PAC) methods
<b>E – Climate Change</b>	<b>E7</b> Identifying and mitigating climate change inputs
<b>F – Waste Management</b>	<b>F8</b> Developing/Implementing waste management plans and programs
	<b>F9</b> Monitoring waste application/disposal/reduction programs and activities
<b>G – Water Quality Management</b>	<b>G10</b> Developing/Implementing water supply and water efficiency plans and programs
<b>H – Environmental Sampling &amp; Analytical Work</b>	<b>H11</b> Developing environmental sampling, testing and monitoring programs
	<b>H12</b> Collecting samples and data for environmental purposes
	<b>H13</b> Analyzing and interpreting environmental samples and data
<b>I – Policy Development &amp; Planning</b>	<b>I14</b> Developing environmental policies, measures & standards
	<b>I15</b> Liaising and partnering with stakeholders
<b>J – Planning, Monitoring &amp; Reporting for Sustainability</b>	<b>J16</b> Developing sustainability strategies, programs, plans, and indicators
	<b>J17</b> Implementing/monitoring sustainability strategies, plans and programs
<b>K – Corporate Environmental Program Planning &amp; Implementation</b>	<b>K18</b> Developing corporate environmental and/or sustainability plans, policies and procedures
	<b>K19</b> Conducting environmental risk assessments
	<b>K20</b> Implementing environmental and/or sustainability management systems
	<b>K21</b> Managing environmental and/or sustainability management systems and practices
	<b>K22</b> Coordinating environmental aspects of facility design & operation

<b>L – Environmental Safety</b>	<b>L23</b> Monitoring/addressing occupational and public health and safety
<b>M – Natural Resources Planning &amp; Management</b>	<b>M24</b> Conducting studies related to ecosystem and habitat preservation and/or the management of natural resources
	<b>M25</b> Developing and implementing plans, programs and practices for ecosystem and habitat preservation and/or the management of natural resources
	<b>M26</b> Monitoring/evaluating effectiveness of programs and practices related to ecosystem and habitat preservation and/or management of natural resources
<b>N – Environmental Training &amp; Education</b>	<b>N27</b> Developing environmental curricula and programs
	<b>N28</b> Implementing environmental education and training
	<b>N29</b> Evaluating/Mentoring/Supervising students/practitioners
<b>O – Environmental Research</b>	<b>O30</b> Designing/developing environmental research and development proposals, programs, and projects
	<b>O31</b> Conducting environmental research/publishing results
<b>P – Environmental Business, Technology &amp; Product Development</b>	<b>P32</b> Developing/Coordinating/Implementing energy efficiency programs
	<b>P33</b> Identifying/Implementing activities pertinent to commercialization of environmental technologies, systems and equipment
<b>Q – Environmental Communications and Public Awareness</b>	<b>Q34</b> Developing/Implementing environmental and/or sustainability communications and awareness programs
	<b>Q35</b> Presenting expert information on environmental matters
<b>R - Energy management, energy efficiency and renewable energy</b>	<b>R36</b> Creating, managing and/or implementing energy management and energy efficiency strategies, initiatives, projects and programs.
	<b>R37</b> Managing and/or implementing renewable energy related strategies, initiatives, projects and programs

## **DICTIONARY OF TECHNICAL COMPETENCIES BY CATEGORY AND SUBCATEGORY, SHOWING PRESENCE BY SUBSECTOR**

The following pages contain an exhaustive list of the 332 technical competencies that make up the NOS.

Most of the competency statements apply directly to work done in one or more specific environmental sub-sectors. For each competency, the subsector(s) to which it applies are denoted by X in the chart. The profile for the subsector will consist of the competencies marked by X

## National Occupational Standards for Environmental Employment

### ID# 2016 Technical Competency Dictionary

#### CATEGORY A: Environmental and Social Impact Assessment

SUB-CATEGORY 1: Conducting Environmental and Social Impact Assessments		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
1	Ensures that the impact assessment scope, criteria and conditions (geographic, environmental, economic, social, and cultural) are defined adequately.	-	-	X	X	-	X	X	X	-	X	X	-	X	X
2	Develops a project management plan for the impact assessment study	-	-	-	-	X	X	-	X	-	-	X	-	-	X
3	Determines if sufficient baseline data is available for the impact assessment study.	X	-	-	-	-	X	-	X	-	X	X	-	-	X
4	Reviews facility/development design or production/manufacturing processes as part of the environmental and social impact assessment	X	-	-	-	-	-	-	X	-	-	-	-	-	X
5	Consults with stakeholders to gather information regarding the perceived impacts of development activities on communities, the environment and natural resources.	X	X	-	X	-	X	X	X	-	-	X	-	X	X
6	Identifies which areas are likely to be significantly impacted by development activities, e.g. biophysical, economic, social, cultural, and heritage resources.	X	-	X	-	-	X	-	X	-	X	X	-	X	X
7	Assesses environmental and/or social issues, risks or problems, including their cumulative effect and corresponding economic, social and cultural impacts.	X	X	X	-	X	X	-	X	-	X	X	-	X	X
8	Develops mitigation and/or habitat compensation plans, strategies and measures using culturally appropriate approaches.	-	-	-	-	-	X	-	-	-	-	X	-	-	X
9	Prepares environmental impact assessment report(s) that may include mitigation, environmental protection, and recovery plans.	X	X	X	-	-	X	-	-	-	-	X	-	-	X

#### CATEGORY B: Site Assessment (RRR)

SUB-CATEGORY 2: Conducting Environmental Site Assessments (ESA - Phase 1 and Phase 2)		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
10	Identifies the scope of the site assessment (phase 1 and 2) project, including identification of the standards to be followed.	-	X	X	X	-	-	-	-	-	-	-	-	-	X
11	Reviews historical records for the site (e.g. site plans, fire insurance maps, legal title searches, business directories, air photos, satellite images, etc.) to determine previous land use.	-	X	X	X	-	-	-	-	-	-	-	-	-	-
12	Carries out visual inspection of site and neighbouring properties as part of the site assessment.	-	X	X	-	-	-	X	X	-	-	-	-	-	-
13	Collects related information from key stakeholders (e.g. owners and staff, municipalities, regulators) regarding land use, facility operations, permits, relevant legislation, etc.	-	X	X	-	-	-	-	-	-	-	-	-	-	-
14	Conducts investigation, sampling, screening, and analysis (including geophysical mapping) activities of landforms, soil, ground water, sediments, airborne contaminants, etc., as required.	X	X	X	X	-	-	-	-	-	X	-	-	-	-
15	Characterizes environmental aspects of site (such as landforms, drainage, plant communities, and soil properties) based on interpretation of data collected during site investigation, sampling and analysis (for example, contaminants, their concentration and general extent).	-	X	X	-	-	X	-	-	-	-	-	-	-	-

16	Prepares site assessment report(s) to meet regulatory and other requirements, identifying potential risk and scope of further action by appropriate stakeholders, if necessary.	X	X	X	-	X	X	-	-	-	-	-	-	-	X
17	Ensures site assessment is completed properly and that action plans are developed and implemented to satisfactorily achieve the desired outcomes.	-	-	-	-	-	X	-	-	-	-	-	-	-	X
18	Communicates results of site assessment to stakeholders such as property owners, responsible party, regulators, the public, etc. via a public consultation or other appropriate communication process.	-	-	-	-	X	X	-	-	-	-	-	-	-	X
<b>SUB-CATEGORY 3: Developing/Implementing Site Remediation (Phase 3) Plans</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>
19	Evaluates possible remediation/restoration/reclamation alternatives, taking into account costs, technological constraints, characteristics of the contaminant, characteristics of the affected land, and stakeholders' concerns.	-	-	X	X	-	X	-	-	-	-	-	-	-	-
20	Recommends remediation clean-up targets to make the site fit for its intended use or return it to its original condition (applies to all sites including watershed restoration, forestry site reclamation, mine closures, etc.).	-	-	X	-	-	X	X	-	-	-	-	-	-	-
21	Develops site remediation/restoration/reclamation plans and programs, including objectives, targets, contamination description, issue resolution process, pilot requirements, time schedule, and cost estimate.	-	-	X	X	-	-	-	-	-	-	-	-	-	-
22	Conducts pilot tests, including treatability studies, to assess the effectiveness of the intended remediation method and/or to advance science and technology.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
23	Conducts full-scale remediation activities (e.g. thermal, biological, chemical or physical treatment, containment, vapour extraction, excavation, removal of heritage objects, etc.).	-	-	X	X	-	-	-	-	-	-	-	-	-	-
24	Monitors post-remediation conditions and results to assess if targets and regulatory requirements have been met.	-	X	X	X	-	-	-	-	-	-	-	-	-	-
25	Prepares remediation completion report, including documentation of remediation and post-remediation monitoring data, and review of environmental outcomes relative to standards, for submission to regulators and stakeholders.	-	X	X	X	-	X	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 4: Developing/Implementing Site Restoration/Reclamation (Phase 3) Plans</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>
26	Investigates attributes of materials, such as physical, chemical, and geotechnical involved in the restoration/reclamation.	-	-	X	-	-	-	-	-	-	-	-	-	-	-
27	Develops appropriate construction and reclamation procedures and contingency plans based on best management and health and safety practices, and a minimum "footprint".	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Conducts on-site reclamation activities (including landscaping, tree-planting, and habitat development), using appropriate species and procedures for revegetation.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
29	Provides environmental inspection during construction and reclamation to ensure that regulatory requirements are met and that procedures and plans are being followed.	-	X	X	-	-	X	-	-	-	-	-	-	-	-
30	Conducts on-site restoration activities as required, e.g. restore riparian, coastal zone, and wetland habitats.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
31	Ensures that best practices are followed in the restoration/reclamation process to minimize the impact on the environment.	-	-	-	-	X	X	-	-	-	-	-	-	-	-
32	Monitors post-restoration/reclamation conditions and results to assess if targets and regulatory requirements have been met.	-	X	X	-	-	X	X	-	-	-	-	-	-	-
33	Prepares site restoration and site reclamation report(s) for submission to the appropriate regulators and stakeholders.	-	-	X	-	-	X	-	-	-	-	-	-	-	-
<b>CATEGORY C: Regulatory &amp; Enforcement</b>															
<b>SUB-CATEGORY 5: Interpreting/Enforcing/Complying with Environmental Regulations and Environmental or Sustainability Standards</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>
34	Provides advice and/or testimony to sr. management, internal staff, regulatory bodies, interest groups and the public regarding environmental regulations and environmental or sustainability standards' issues.	X	X	X	X	X	-	-	X	-	-	X	-	X	X
35	Applies environmental legislation regarding issues such as contaminated sites, hazardous materials and waste, pesticide use, storage tanks, etc. to specific applications as appropriate.	X	X	X	X	X	-	-	X	-	-	X	-	-	X
36	Defines environmental and/or sustainability performance requirements for specific jurisdictions.	X	-	-	X	X	-	-	-	-	X	X	-	X	X
37	Prepares regulatory applications.	X	X	X	X	-	-	-	-	-	-	X	-	-	X
38	Prepares permits and operational permit reports (including air permits, waste disposal permits, resource harvesting permits, etc.).	X	X	X	X	-	-	-	-	-	-	X	-	-	X
39	Negotiates the terms and approval of compliance procedures and permits, including approval of development plans and use of technology such as Pollution Prevention, Abatement, and Control equipment and systems.	X	-	-	-	-	-	-	-	-	-	X	-	-	X

40	Develops plans and programs to meet environmental regulatory requirements and/or environmental and sustainability standards.	X	X	X	X	X	-	-	X	-	-	X	-	X	X
41	Implements programs, including monitoring activities, to ensure regulatory compliance and standards conformance.	X	X	X	X	X	-	-	X	-	-	X	-	X	X
42	Evaluates compliance with environmental regulations and conformance to environmental and sustainability standards.	X	X	X	X	X	-	-	X	-	-	X	-	X	X
43	Prepares compliance and regulatory reports for internal use and for filing with regulatory or reporting agencies.	X	X	X	X	X	-	-	X	-	-	X	-	X	X
44	Enforces regulations pertaining to the environment and natural resources, including inspecting sites, patrolling, and issuing warnings.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
45	Oversees or participates in audits of the environmental and/or sustainability performance to determine adequacy of procedures and non-compliance/conformance issues.	X	X	-	X	-	-	-	X	-	-	-	-	X	X
723 (NEW)*	Demonstrates understanding of meteorological concepts, what dispersion modeling is, its inputs, data requirements, application of criteria and how to interpret the model and results	X	-	-	-	-	-	-	-	-	-	-	-	-	-
724 (NEW)*	Run regulatory air quality models to assess air quality compliance for the purpose of meeting standards or criteria	X	-	-	-	-	-	-	-	-	-	-	-	-	-
725 (NEW)*	Prepare air quality assessments to investigate potential impact of new developments to comply with municipal planning requirements or reduce public complaints	X	-	-	-	-	-	-	-	-	-	-	-	-	-
726 (NEW)*	Develops emissions inventories (criteria air contaminant and GHG) or calculate emissions for assessment of air quality for regulatory or non-regulatory (engineering, design, reporting, national pollutant release inventory (NPRI))	X	-	-	-	-	-	-	-	-	-	-	-	-	-

**CATEGORY D: Pollution Prevention, Abatement, & Control**

<b>SUB-CATEGORY 6: Implementing Pollution Prevention, Abatement &amp; Control (PAC) Methods</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
46	Assesses operations and processes for potential pollution problems (involves identifying contaminant sources, determining their characteristics and the magnitude of the potential risks).	X	X	-	X	X	-	-	-	-	X	-	-	-	-
47	Characterizes the attributes of processes and products generated (for example, chemical/biological composition, toxicity, physical properties and degradability).	X	X	-	-	X	-	-	-	-	-	-	-	-	-
48	Evaluates the presence and dispersion of pollutants over large geographic areas using, for example, remote sensing devices such as satellites and aerial photos, regional monitoring devices and government reports, and regulated models.	X	-	-	-	-	-	-	-	-	-	-	-	-	-
49	Develops recommendations for the best management practice for pollution prevention, abatement, and control measure(s), including the evaluation of control options versus process changes.	X	-	-	-	-	-	-	-	-	-	-	-	-	-
50	Implements pollution prevention, abatement, and control methods/solutions to prevent, abate, control and reduce pollution, contamination or emissions (e.g. devises ways to prevent contamination of water by agri-chemicals and petroleum products).	-	X	-	-	X	-	-	-	-	-	-	-	-	-
51	Monitors the effectiveness of Pollution Prevention, Abatement, and Control (PAC) solutions, and the performance of installed PAC equipment, systems and technologies.	X	X	-	-	X	-	-	-	-	-	-	-	-	-
727 (NEW)*	Prepare and submit to the national pollutant release inventory (NPRI) the quantities of substances that are released in the air by facilities on an annual basis	X	-	-	-	-	-	-	-	-	-	-	-	-	-
730 (NEW)*	Demonstrate a general knowledge of air emissions control technologies.	X	-	-	-	-	-	-	-	-	-	-	-	-	-
731 (NEW)*	Assist in the development and implementation of air quality monitoring and control plans for the site	X	-	-	-	-	-	-	-	-	-	-	-	-	-

**CATEGORY E: Climate Change**

<b>SUB-CATEGORY 7: Identifying and Mitigating Climate Change Impacts</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
52	Monitors global climate and air quality phenomena such as stratospheric ozone depletion and the greenhouse effect.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	Develops strategies and programs to address energy consumption and greenhouse gas generation that conform to standard protocols and legislated requirements.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	Implements GHG adaptation strategies to optimize the utilization of renewable energy and/or conservation of natural energy resources.	-	-	-	-	-	-	-	-	-	-	-	-	-	-

55	Develops progressive approaches and solutions to modify national, corporate and individual habits to react to potential global climate changes.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	Develops greenhouse gas emissions inventories/trading systems to be compatible with the regulatory programs.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	Tracks air quality and greenhouse gas emissions for purposes such as evaluating, reporting and trading emissions.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58	Develops greenhouse gas emissions/climate change reports.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-

### CATEGORY F: Waste Management

SUB-CATEGORY 8: Developing/Implementing Waste Management Plans and Programs		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
59	Assesses the effectiveness and applicability of waste management programs and technologies to identify, for example, appropriate waste management solutions.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
60	Identifies optimum methods for the segregation and physical handling of materials at waste management facilities and/or in landfills.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
61	Establishes procedures for residential and commercial waste handling by a municipality or private company, including recycling economic considerations and reuse programs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	Develops waste management plans, including waste reduction programs that address the needs of specific industries, organizations, departments, institutions, etc. and incorporate applicable regulations, such as Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods (TDG), Workplace Health and Public Safety Programme (WHPS), and Atmospheric Environment Program (AEP).	-	-	-	X	-	-	-	-	-	-	-	-	-	-
63	Develops waste management strategies, taking economics and the life cycle of the product or service into consideration.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
64	Assesses the cumulative effects and performance of waste management strategies.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
65	Conducts audits of waste management facilities to assess their adequacy to process waste and meet corporate and regulatory standards.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
66	Implements programs for the management of hazardous and non-hazardous wastes, including: handling, storage, collection, transportation, treatment, disposal (regarding all types of residential, municipal, commercial, and industrial wastes, including agricultural waste, forest harvesting debris, etc.).	-	-	-	X	X	-	-	-	-	-	-	-	-	-
67	Ensures regulatory requirements are met in the collection, transport, storage and disposal of hazardous wastes.	-	-	-	X	X	-	X	-	-	-	X	-	-	-
68	Implements reduce, reuse, recycle programs (e.g. using alternative processes, composting, waste-to energy programs, re-using harvesting debris, spreading manure, etc.).	-	-	-	X	-	-	-	-	-	-	-	-	-	-
69	Analyzes waste streams and volumes to determine the best technology for operations, commercial waste opportunities, and/or waste reduction strategies.	X	-	-	X	-	-	-	-	-	-	-	-	-	-
SUB-CATEGORY 9: Monitoring Waste Application/Disposal/Reduction Programs and Activities		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
70	Determines requirements of new/improved waste disposal, treatment and recycling systems (e.g. waste volumes, types and methods of treatment).	-	-	-	X	-	-	-	-	-	-	-	-	-	-
71	Characterizes waste and waste streams.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
72	Monitors (potential) emissions and discharges of waste disposal sites for their effects on surrounding air, water and soils (including for example sanitary landfills, hazardous waste disposal sites, etc.).	-	-	-	X	X	-	-	-	-	-	-	-	-	-
73	Uses models to simulate the fate, transport and impacts of contaminants such as discharges, emissions, and toxicants, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	Tracks waste generation: source, volume, type, location, storage, transportation and disposal.	-	-	-	X	-	-	-	-	-	-	-	-	-	-
75	Conducts waste audits to determine, for example, if waste is properly identified and managed, and if material being disposed conforms to permitted use of the disposal facility/site.	-	-	-	X	-	-	-	-	-	-	-	-	-	-

### CATEGORY G: Water Quality Management

SUB-CATEGORY 10: Developing/Implementing Water Supply and Water Efficiency Plans and Programs		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
76	Assesses the environmental aspects of the design, operation and maintenance of water and wastewater distribution/collection systems.	-	X	-	-	-	-	-	-	-	-	-	-	-	-
77	Assesses the quality and availability of water supply (both surface and groundwater).	-	X	-	-	-	-	-	-	-	-	-	-	-	-

78	Develops water management programs including demand management, water conservation, and water or wastewater treatment programs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	Implements strategies to achieve demand management and water conservation targets through programs and projects.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	Monitors effectiveness of water/wastewater programs and water treatment equipment and processes to meet environmental performance requirements.	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
81	Provides expert advice for the development of plans for a variety of financially, socially and environmentally acceptable water efficiency projects and programs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	Determines siting requirements for water wells, farm buildings, industry and feedlots considering such factors as waste run-off patterns and municipal/provincial regulations.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	Designs water treatment plants, storage facilities and diversion methods to enhance efficiency and minimize environmental impact.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	Provides guidance and management on day to day operations of water treatment plants.	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
85	Supports in the optimization of plant processes and operations to ensure/maintain excellent water quality.	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-

### CATEGORY H: Environmental Sampling & Analytical Work

SUB-CATEGORY 11: Developing Environmental Sampling, Testing and Monitoring Programs		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
86	Determines the need and scope for sampling program, including environmental indicators, chemicals of concern, and sampling constraints	X	X	X	X	X	-	-	X	-	X	-	-	-	-
87	Develops environmental sampling protocols, including data quality objectives, the frequency and timing of sampling, optimum locations for continuous or discrete sampling, data capture systems, sampling procedures, sampling methodology, personnel, and parameter list for analysis.	X	X	X	X	-	-	-	-	-	X	-	-	-	-
88	Develops site-specific work plans, including Quality Assurance/Quality Control (QA/QC) methods, measuring/monitoring procedures and analytical equipment (both field and lab equipment) to be used for the specific application (e.g. air, water, soil, sediments, rock, fauna, flora, human, workplace, etc.).	X	X	X	X	-	X	-	-	-	X	-	-	-	-
89	Develops methodologies and protocols for the collection and analysis of qualitative data to complement any quantitative data collected.	X	X	-	X	-	-	-	X	-	X	-	-	-	-
90	Modifies existing sampling programs to reflect changing research priorities and/or environmental circumstances.	-	X	X	X	-	-	-	-	-	X	-	-	-	-
91	Maintains analytical test instruments and monitoring or sampling equipment as per manufacturers' user-maintenance specifications and user's standard operating procedures, including calibration of instruments/equipment.	X	X	-	-	-	-	-	-	-	X	-	-	-	-
SUB-CATEGORY 12: Collecting Samples and Data for Environmental Purposes		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
92	Determines the appropriate sample size, sampling containers, protocols, preservation methods, collection apparatus and transportation, etc.	X	X	X	-	-	X	-	-	-	X	-	-	-	-
93	Selects, assembles and deploys analytical test instruments or sampling equipment (such as data capture systems, continuous monitoring devices, drilling cores, water bailers, etc.), including assembly and documentation of deployment and operational conditions and other pertinent details, such as any deviation to standard procedures.	X	X	X	-	-	-	-	-	-	X	-	-	-	-
94	Collects samples and specimens as per established protocol, using more routine sampling procedures and apparatus.	X	X	X	-	X	-	-	-	-	X	-	-	-	-
95	Collects samples and specimens as per established protocol, using more complex sampling procedures and apparatus.	X	X	X	-	-	-	-	-	-	X	-	-	-	-
96	Uses appropriate techniques to prepare (code, preserve, pre-treat and transport) samples for analysis while maintaining chain of custody requirements and sample integrity.	X	X	X	X	X	-	-	-	-	X	-	-	-	-
97	Prepares samples (other than biological) for lab analysis using techniques such as grinding, dehydration, dilution or concentration, chemical extraction, digestion, and fractionation.	-	-	-	-	-	-	-	-	-	X	-	-	-	-
98	Prepares biological samples for lab analysis using techniques such as dissection, emulsification, and tissue or bacterial culturing.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	Performs direct measurement of physical parameters for air/water/soil, including for example, temperature, flow rates, pressure, gaseous/particulate emissions, etc.	X	X	-	-	-	-	-	-	-	X	-	-	-	-

100	Collects data on odours or taste (e.g. for muddy flavour) using appropriate means to determine thresholds.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	Collects data from images obtained from sources such as remote sensing devices, satellite, and aerial/terrestrial/under-water cameras/sensors.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	Maintains appropriate records and ongoing documentation pertaining to field and laboratory analytical work, including regulatory documentation.	X	X	X	X	-	X	X	X	-	X	-	-	-	-	-
722 (NEW)*	Ensures the coordination with laboratories to establish appropriate water sample parameters, submission dates and deliverable of sample collection containers.	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 13: Analyzing and Interpreting Environmental Samples and Data</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
103	Uses more routine analytical procedures and instruments (such as meters, electrodes, and spectrophotometers) to identify and/or quantify the physicochemical properties, specific chemicals or chemical groups, etc. of the samples collected.	-	X	-	-	-	-	-	-	-	X	-	-	-	-	-
104	Uses more complex analytical procedures and advanced instruments, such as gas liquid chromatography, mass spectrometry, polymerase chain reaction and Enzyme-Linked ImmunoSorbent Assay, to identify and/or quantify chemical properties, specific chemicals or chemical groups (including those present at trace concentrations), etc. in the samples collected.	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
105	Analyzes samples for microbiological organisms by application of basic methods such as aseptic techniques, membrane filtration, staining procedures, culturing & isolation procedures, microscopic and related techniques.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106	Classifies samples using applicable classifications (e.g., CSCC soil classification, taxonomy, sorting sample by phylum, order, family, and species).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	Classifies soils, land formations, minerals, etc. by their type, chemical and geophysical properties, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	Makes required calculations and estimates including for example, calculation of air quality indices (e.g. daily smog ratings).	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-
109	Conducts statistical analysis of data using appropriate computer software, databases, etc.	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-
110	Assesses the accuracy and precision of analytical results by applying good practice guidance or established QA/QC methods.	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-
111	Interprets analytical data to identify trends, significant changes from historical patterns, deviations, or evidence of environmental stresses, etc.	X	X	X	-	-	-	-	-	-	X	-	-	-	-	-
112	Determines how results will be applied, for example redesigning sampling protocol, redesigning research methodology, developing a baseline dataset, etc.	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-
113	Conducts quality control reviews of data collection, processing, and analysis to ensure data is 'fit for purpose' using accepted scientific practices and proper Quality Assurance/Quality Control (QA/QC) protocols.	X	X	X	X	-	-	X	-	-	X	-	-	-	-	-
114	Prepares summary reports of analysis results to be added into technical reports or presentations to expert and/or non-expert audiences	X	X	X	-	-	-	-	X	-	X	-	-	-	-	-
<b>CATEGORY I: Policy Development &amp; Planning</b>																
<b>SUB-CATEGORY 14: Developing Environmental Policies, Measures &amp; Standards</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
115	Lobbies legislators to develop appropriate environmental policy and to enforce regulations and standards.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
116	Reviews existing and/or proposed environmental policies/legislation/standards (and the rationale supporting them) to assess implications to stakeholders, including customers and suppliers.	X	-	-	-	-	-	-	-	-	-	X	-	-	-	X
117	Influences environmental policy and legislation by participating in or leading expert level environmental committees and associations.	X	-	-	-	-	-	-	-	-	-	X	-	-	-	-
118	Consults with experts, including environmental, policy and legislative experts in public, corporate, non-governmental organizations (NGO), and governments, regarding new or revised environmental policies and legislation to make recommendations to regulatory authorities.	X	-	-	-	-	-	-	-	-	-	X	-	-	-	X
119	Develops environmental frameworks to address policy issues across multiple jurisdictions, including legal and legislative limitations of the various jurisdictions.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
120	Evaluates environmental business management practices in Canada in light of international policy changes in order to influence future changes in Canada's legislative framework.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
121	Drafts new or revised environmental legislation, regulations, standards and guidelines.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-

728 (NEW)*	Provides feedback to developers of air quality legislation, regulation, standards and guidelines	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
729 (NEW)*	Contributes in the revision of existing and/or proposed air quality legislation/regulation/standards and their rationale to disseminate implications to stakeholders	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 15: Liaising and Partnering with Stakeholders</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
122	Liaises with stakeholders to collaborate on environmental stewardship and resolve sustainability issues and concerns.	-	-	-	-	-	X	X	-	-	-	X	X	X	X	
123	Identifies ethical and cultural concerns regarding the economic, social, cultural, and spiritual valuing of specific natural resources, and the implications for informed decision-making regarding sustainability.	-	-	-	-	-	-	X	-	X	-	X	X	X	X	
124	Builds consensus regarding the goals and timelines of sustainable development initiatives (e.g. use of natural resources), considering the competing interests of all stakeholders (e.g. economics, increased productivity or harvesting, protecting habitats, access and rights to land, etc.).	-	-	-	-	-	-	X	-	X	-	X	-	-	X	
125	Develops partnerships with key stakeholders to enhance environmental stewardship and address sustainability issues and concerns.	-	-	-	-	-	X	X	X	-	-	X	X	X	X	
126	Develops partnership and stewardship agreements which incorporate sustainable development guidelines, indicators, targets, and processes for measuring progress related to specific environmental issues.	-	-	-	-	-	-	X	-	X	-	X	X	-	X	
127	Secures partnerships involving industry joint ventures, environmental consulting, and/or environmental technology transfer at municipal, provincial, national and international levels.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	
<b>CATEGORY J: Planning, Monitoring &amp; Reporting for Sustainability</b>																
<b>SUB-CATEGORY 16: Developing Sustainability Strategies, Programs, Plans and Indicators</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
128	Develops a framework and policies, with input from key stakeholders, for identifying sustainable development approaches and solutions that balance environmental, economic, social and cultural needs.	-	-	-	-	-	-	-	X	-	-	-	-	X	-	
129	Identifies and addresses gaps in scientific, technical and cultural knowledge necessary in forecasting/modeling sustainable development scenarios	-	-	-	-	-	-	-	X	-	-	-	-	-	-	
130	Identifies and stays current with trends, best management practices, technology advancements and guiding principles for sustainability	-	-	-	-	-	-	-	X	-	-	-	-	X	-	
131	Advices in the development of sustainability strategies, plans, programs or initiatives	-	-	-	-	-	-	-	X	-	-	-	-	X	-	
132	Evaluates the environmental, economic, social and cultural implications of potential sustainability initiatives.	-	-	-	-	-	-	-	X	-	-	X	-	X	-	
133	Identify sustainability targets and indicators of environmental, economic, social and cultural change.	-	-	-	-	-	-	-	-	-	-	-	-	X	-	
134	Develops sustainability indicators and a process for reporting progress towards environmental performance targets.	-	-	-	-	-	-	-	X	-	-	-	-	X	-	
135	Develops sustainable development plans that integrate economic, social and cultural needs with ecosystem-based management strategies.	-	-	-	-	-	-	-	-	-	-	-	-	X	-	
668 (NEW)*	Participates in informing, developing and/or implementing improvements to organizational operations in areas such as pollution prevention, abatement and control, energy efficiency, water and/or waste management.	-	-	-	-	-	-	-	-	-	-	-	-	X	-	
<b>SUB-CATEGORY 17: Implementing/Monitoring Sustainability Strategies, Plans and Programs</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
136	Implements sustainable development strategies	-	-	-	-	-	-	-	X	-	-	-	-	X	-	
137	Monitors changing needs of stakeholders and effectiveness of sustainable development strategies overtime to determine if strategies, targets, and/or timelines need to be modified	-	-	-	-	-	-	-	X	-	-	-	-	-	-	
<b>CATEGORY K: Corporate Environmental and/or Sustainability Program Planning &amp; Implementation</b>																
<b>SUB-CATEGORY 18: Developing Corporate Environmental and/or Sustainability Plans, Policies, and Procedures</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
138	Advocates with senior management and/or other key stakeholders to ensure due consideration of and commitment to environmental/sustainability management and sustainability principles and strategies.	-	-	-	-	X	-	X	-	-	-	X	-	X	X	
139	Develops strategic partnerships/relationships with key stakeholders to garner advice/gain commitment to organization's environmental and/or sustainability policies/initiatives	-	-	-	-	-	-	X	-	-	-	X	X	X	X	

140	Advises senior management and/or other stakeholders on corporate environmental and/or sustainability responsibilities, regulatory and reporting requirements, and corporate liability.	-	-	-	-	X	-	-	-	-	-	X	-	X	X
141	Provides advice to senior decision makers on the extent to which environmental liabilities and risk are being managed appropriately.	-	-	-	-	X	-	-	-	-	-	-	-	-	X
142	Evaluates the environmental, economic, social and cultural impacts and implications of the organization's operations and processes.	-	-	-	-	-	-	-	-	-	-	X	-	X	X
143	Evaluates the effectiveness of indicators (including economic, social, cultural, and human health) to measure progress in areas such as a reduction in emissions to the environment.	-	-	-	-	-	-	-	-	-	-	-	-	X	-
144	Prepares environmental and/or sustainability performance reports (i.e. Global Reporting Initiative - GRI) relative to established metrics for communication to internal management, regulatory and stakeholder groups.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
145	Makes recommendations for improvements to organizational operations based on an evaluation of corporate environmental and/or sustainability performance.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
146	Benchmarks environmental and/or sustainability policies and performance against those of corporate, municipal, provincial, regional, national, or international peers.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
147	Develops organization's environmental and/or sustainability policies and programs in alignment with regulations, corporate values & stakeholders' environmental economic, social and cultural expectations.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
148	Assesses the cost-benefit implications of the changes in process or practices required to conform to new standards or guidelines.	-	-	-	-	-	-	-	-	-	-	-	-	X	-
149	Develops the environmental and/or sustainability policy component of the organization's strategic plan, supporting processes and practices.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
<b>SUB-CATEGORY 19: Conducting Environmental Risk Assessments</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>
150	Identifies hazards, opportunities or potential risks to human health, the environment, facility operation/financial loss, legal liability, social impact, public perception through such activities as collecting source data, reviewing literature, investigating illness/injuries, and obtaining feedback from workers or the public.	-	X	-	-	X	-	-	-	-	X	-	-	-	X
151	Conducts hazards and operability studies (e.g. of oilfield facilities and operations).	-	-	-	-	-	-	-	-	-	-	-	-	-	-
152	Predicts the probable exposure to hazards using exposure and chemical fate/transport models, and the physical and chemical properties of contaminants.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
153	Conducts qualitative assessment of risk by identifying the likelihood of events and the likelihood and severity of individual consequences.	-	-	-	-	X	-	-	-	-	-	-	-	-	-
154	Conducts quantitative risk assessment to identify the direct and indirect consequences of individual and multiple environmental impacts, including remediation and restoration activities if applicable.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
155	Characterizes the risks of environmental stressors or contaminants at varying intensities and cumulative dosages on human health and/or the ecosystem.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
156	Develops site specific standards/criteria to identify and manage risk with help from toxicologists and medical staff.	-	-	-	-	X	-	-	-	-	-	-	-	-	-
157	Develops risk management strategies, including prioritization of risks and actions to address ecological and human risks, and to manage financial, legal, social, and public perception issues.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
158	Uses models to evaluate the effectiveness of the risk management strategies in the Environmental Management Systems for contaminants of concern, and the resulting impact on the environment (for example, reduction of greenhouse gas emissions).	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	Assesses the effectiveness of risk management activities to minimize impact on the environment and human health.	X	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 20: Implementing Environmental and/or Sustainability Management Systems</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>
160	Develops an Environmental and/or Sustainability Management System which is consistent with the organization's strategic plan and regulatory requirements.	X	-	-	-	-	-	-	-	-	-	-	-	X	X
161	Implements the Environmental Management System strategies and practices.	X	X	-	-	-	-	-	-	-	-	-	-	-	X
162	Integrates the environmental and/or management components of new operations, new projects, facility expansions, etc. into the corporate environmental/sustainability management program.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
163	Provides leadership to all aspects of the design, implementation, monitoring and reporting on the corporate environmental and/or sustainability management program.	-	-	-	-	-	-	-	-	-	-	-	-	X	X
164	Ensures that corporate environmental and/or sustainability management projects and proposals meet corporate standards, and financial and budgetary requirements.	-	-	-	-	-	-	-	-	-	-	-	-	X	X

165	Advises on human resource issues pertaining to the responsibilities and selection of external environmental contractors and consultants and the internal environmental team in accordance with the organization's policies and regulatory standards.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
166	Develops full life cycle plans for the stewardship of environmental resources (from development to restoration, if applicable).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
167	Implements programs and practices that encourage accountability, for example, by integrating environmental responsibilities into employees' jobs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
168	Integrates risk management decisions into the Environmental and or Sustainability Management System and/or corporate business/strategic planning.	-	-	-	-	-	-	-	-	-	-	-	-	X	-	
733 (NEW)*	Delivers training programs on environmental reporting, environmental recording and/or environmental management systems	-	-	-	-	X	-	-	-	X	-	-	-	-	-	-
<b>SUB-CATEGORY 21: Managing Environmental and/or Sustainability Management Systems and Practices</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
169	Uses information systems to monitor and track Environmental and/or Sustainability Management Systems' requirements.	-	-	-	-	-	-	-	-	-	-	-	-	X	X	
170	Revises Environmental and/or Sustainability Management System practices and outcomes to correct and prevent non-conformance.	-	X	-	-	-	-	-	-	-	-	-	-	X	X	
171	Manages audits of the Environmental Management System to identify areas where corrective actions are needed.	-	-	-	-	-	-	-	-	-	-	-	-	-	X	
172	Benchmarks the organization's Environmental and/or Sustainability Management System against that of other companies and/or international standards (e.g. ISO).	-	-	-	-	-	-	-	-	-	-	-	-	X	X	
<b>SUB-CATEGORY 22: Coordinating Environmental Aspects of Facility Design &amp; Operation</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
173	Determines the environmental aspects of the design and operation of the proposed facility, plant, landfill, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
174	Develops plans, protocols and procedures to address the environmental aspects of facility design, construction, operation and closing.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
175	Coordinates the implementation of the environmental aspects of plans, protocols and procedures related to facility construction and operations.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
176	Implements measures to correct environmental or safety problems relative to the facility or operation site.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
177	Implements the environmental aspects of decommissioning facilities, operations or exploitation sites.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>CATEGORY L: Environmental Health &amp; Safety</b>																
<b>SUB-CATEGORY 23: Monitoring/Addressing Occupational and Public Health and Safety</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
178	Evaluates the significance of environmental occupational/public hazards and safety issues as a basis for the development of policies, programs and procedures.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
179	Develops and implement programs to manage risk to the public.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
180	Develops preventative programs that help protect workers' (or the public's) health and safety in response to environmental concerns.	-	X	-	-	X	-	-	-	-	-	-	-	-	-	
181	Develops organizational procedures concerning environmental and occupational/public health and safety matters.	-	X	-	-	X	-	-	-	-	-	-	-	-	-	
182	Implements measures to mitigate the health & safety hazards associated with environmental issues created by operations or construction activities and their by-products such as hazardous leachates, effluents and dusts.	-	X	-	-	X	-	-	-	-	-	-	-	-	-	
183	Develops emergency response plans and procedures to address environmental crises (such as accidental emissions, discharges, releases, explosions, leaks or spills that could cause a threat to humans and the environment), in consultation with stakeholders and emergency response experts.	-	X	-	-	X	-	-	-	-	-	-	-	-	-	
184	Plans responses to mitigate human health risks/dangers of catastrophic events and insidious damage, such as the release of toxic gases.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
185	Monitors existing or potential environmental health hazards and stressors such as noise, energy (UV, IR, radiation), chemical/biological pollutants in the air, water, and/or soil.	-	X	-	-	X	-	-	-	-	-	-	-	-	-	
186	Monitors HVAC systems relative to health and safety standards for indoor air quality.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
187	Assesses the effectiveness of health and safety programs for continuous improvement of programs and results.	-	-	-	-	X	-	-	-	-	-	-	-	-	-	

**CATEGORY M: Natural Resources Planning & Management**

<b>SUB-CATEGORY 24: Conducting Studies Related to Ecosystem and Habitat Preservation and/or the Management of Natural Resources</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
188	Develops models to set targets for sustainable use and/or to predict outcomes of conservation practices.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
189	Develops methods for indexing existing natural resources and parameters (e.g. wildlife populations and harvest mortality).	-	-	-	-	-	X	-	-	-	-	-	-	-	-
190	Defines data (e.g. age, size, structure of population, genetics, distribution, migration patterns, abundance, water temperature, environmental factors, etc.) to forecast future state of natural resources, such as fish populations.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
191	Establishes the biodiversity baseline (e.g. nature, number and location of species involved) of the management area under study.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
192	Identifies interrelationships between individual ecosystem parameters to develop comprehensive databases of natural resources.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
193	Assesses the economic, social and cultural value of natural and physical resources, such as parks/open spaces, heritage resources, wildlife, minerals, etc.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
194	Establishes background levels of naturally occurring biological, chemical, and physical activity in ecosystems, such as naturally occurring emissions from forests.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
195	Identifies the impact of development/exploration/exploitation activities on the biodiversity of surrounding natural habitats (such as the "downstream" impacts of agricultural activities on surrounding soil and water).	-	X	-	-	-	X	X	-	-	-	-	-	-	-
196	Applies GIS tools to monitor change and identify trends in natural habitats and/or ecosystems in order to manage habitat quality and resource sustainability.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
197	Evaluates the capability of target sites to sustain restoration, rehabilitation and/or enhancement activities (of fisheries, forestry, etc.).	-	-	-	-	-	X	-	-	-	-	-	-	-	-
198	Evaluates the benefit of human-built structures (such as dams, ditches and fish weirs) to prevent destruction or erosion and/or to rehabilitate the habitat.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
199	Evaluates the best sites and routes (e.g. gas/oil wells, gas processing plants, pipelines, and mines) for habitat and ecosystem preservation and conservation of natural resources.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
200	Conducts modelling of ecosystem variables to predict potential outcomes of habitat restoration practices (such as fisheries rehabilitation or forestry regeneration).	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201	Determines how and to what extent the natural resource can be modified (e.g. soil tilled, forest harvested) based on its characteristics.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
202	Compiles a comprehensive inventory of data collected to establish a baseline that characterizes ecosystems, natural resources, and social and cultural factors, and/or to determine suitability for an intended use.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
203	Prepares baseline report including gap analysis report where baseline data is incomplete, interpretation of baseline data and development of recommendations for consideration by stakeholders and decision-makers.	-	X	-	-	-	X	-	-	-	-	-	-	-	-
204	Designs monitoring systems for measuring human impacts on natural resources and/or ecosystems.	-	X	-	-	-	X	-	-	-	-	-	-	-	-
205	Tracks the deviation of earth and life science inventories from baseline levels through environmental monitoring programs.	-	X	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 25: Developing and Implementing Plans, Programs and Practices for Ecosystem and Habitat Preservation and/or the Management of Natural Resources</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
206	Investigates significant occurrences and changes that may signal the need for a resource management and/or ecosystem preservation plan.	-	X	-	-	-	-	-	-	-	-	-	-	-	-
207	Seeks input from technical specialists (e.g., biologists, taxonomists, modellers) and other stakeholders (governments, non-governmental organizations, aboriginal peoples, etc.) with respect to resource management and habitat protection (such as the identification of important habitat sites).	-	X	-	-	-	X	X	-	-	-	-	-	-	-
208	Determines opportunities, options, and targets for increased productivity, utilization or yield of natural resources.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
209	Establishes indicators of ecosystem health, based on established baseline data or extrapolations from similar ecosystems and/or traditional knowledge where available.	-	-	-	-	-	X	-	-	-	-	-	-	-	-
210	Determines end-use of natural resources (e.g., crops, forest, fisheries) to forecast future needs and demands and the corresponding resource management practices and the basis for its selection.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
211	Formulates integrated ecosystem and habitat management plans (including interim management plans for public consultations) and programs to address identified preservation and conservation needs.	-	-	-	-	-	-	X	-	-	-	-	-	-	-
212	Implements ecosystem and habitat preservation projects and practices (such as preservation of fish and wildlife habitats and restoration in lakes, rivers, streams, wetlands, marshlands, etc.) to protect and conserve the biodiversity and health of ecosystems.	-	-	-	-	-	X	X	-	-	-	-	-	-	-

213	Implements fisheries and wildlife management and conservation practices such as limiting catch and capture, restocking, banding, and increasing nesting and breeding sites.	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
214	Implements forestry management and conservation practices such as site preparation, fertilization, replanting, seeding, pre-commercial thinning, brushing, pest control, etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
215	Identifies effective resource management practices, including consideration of cultural and spiritual values of various jurisdictions and stakeholders (including indigenous peoples).	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
216	Develops effective practices to deal with naturally occurring phenomena, such as damage to crops caused by wildlife or damage/benefits to forests caused by fire.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
217	Determines the resources and partnerships required to implement a natural resource management/conservation plan (e.g. funding mechanisms, services).	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
218	Formulates integrated natural resource management plans (including interim management plans for public consultations) and programs to address identified preservation and conservation needs.	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
219	Implements agricultural land conservation practices (such as preventing wind or water erosion, maintaining soil organic matter, correcting or controlling soil salinity problems, etc.) to conserve the availability and productivity of agricultural land.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
220	Advises producers on the full range of sustainable resource utilization and harvesting practices and techniques, such as soil conservation/enhancement technologies (e.g. tillage options, measures to prevent wind and water erosion, crop rotation, cropping systems, nutrient management, and residue management).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
221	Implements conservation and preservation practices to manage the environmental impact of human activity in parks and natural recreation areas.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
222	Implements urban land resource management practices to minimize detrimental impacts and to maximize environmental benefits, such as restoring undeveloped public lands to their natural state and ensuring proposed developments are consistent with land-use management criteria.	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
223	Identifies criteria, in collaboration with stakeholders, for evaluating proposals and land-use plans to determine impacts of changes in use of land resources such as conversion of agricultural land to urban use.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
224	Identifies residual environmental impact and the associated economic implications (e.g. cash compensation to landowners for land use) of a proposed change in the use of natural resources.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
225	Uses models and data (such as projections of population growth, municipal infrastructure needs, and increased demand for resource-based commodities) to forecast the environmental impact of long-term requirements for land resources such as parks, natural recreation sites, agricultural land, and urban development.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
226	Develops long term integrated land-use plans (for urban, recreational, industrial, and agricultural uses) that include strategies (such as landscape ecology) to minimize adverse environmental impact.	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 26: Monitoring/Evaluating Effectiveness of Programs and Practices Related to Ecosystem and Habitat Preservation and/or Management of Natural Resources</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
227	Evaluates exploitation or exploration technologies (used to harvest/use natural resources) that do the least damage (low impact) to ecosystems.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
228	Monitors baseline data to identify changes, both positive and negative, in order to continually improve conservation and preservation practices.	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
229	Assesses the effectiveness of conservation and preservation practices, including the interpretation of monitoring data and the validation of conclusions with experts in the field (e.g. government agencies, harvesters, industry, and non-governmental organizations).	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
230	Evaluates the effectiveness of alternative conservation practices (such as silviculture systems) that are perpetual or require minimal maintenance.	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
231	Evaluates the effectiveness of changes in municipal by-laws, regulations, and/or targets (such as targets for “green” and/or natural space) in minimizing the adverse impact of land-use activities on natural ecosystems.	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
232	Evaluates the socio-economic costs and benefits of conservation and preservation practices, including the spin-off costs and benefits, and where appropriate, the social assessment parameters.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

### CATEGORY N: Environmental Education & Training

SUB-CATEGORY 27: Developing Environmental Curricula and Programs		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
233	Demonstrates a knowledge of environmental science and technology that enables the educational professional to understand the fundamental relationships between human activities and the natural environment.	-	X	-	-	-	-	X	-	X	-	-	-	-	-
234	Demonstrates an understanding of how the educational professional's specific body of knowledge can be applied to address the economic, social, cultural and political impacts of human activities on the natural environment.	-	-	-	-	-	-	X	-	X	-	-	-	-	-
235	Contributes to the development of a conceptual framework and mission for environmental education programs, e.g. Environment Canada's National Framework for Environmental Learning and Sustainability.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
236	Participates in taskforces and committees (set up by educational institutions, industry, governments or professional associations) to identify emerging needs and issues in environmental education and strategies to address these needs.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
237	Identifies environmental competency requirements for accreditation purposes (meeting provincial, national, and international standards), including those that will develop the capacity of environmental professionals to approach environmental issues in a holistic manner.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
238	Conducts needs assessments/gap analysis to determine environmental education requirements, considering existing and proposed academic education and industry training programs/courses.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
239	Determines strategy on how the program will be coordinated/integrated with other programs, departments, faculties, and other disciplines and institutions.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
240	Develops proposals for approval and/or funding of environmental education and training programs/courses.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
241	Contributes to the development of a curriculum that addresses the full range of identified environmental education requirements.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
242	Stays abreast of industry feedback generated through associations, councils, etc. to ensure the curriculum and learning sessions stay relevant to trends in the industry.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
243	Designs the individual education and training courses to facilitate the development of the relevant environmental competencies in specific subject areas.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
SUB-CATEGORY 28: Implementing Environmental Education and Training		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
244	Determines the appropriate presentation approach for each environmental education and training course, e.g. classroom, distance interactive, workshops, etc.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
245	Delivers the course/training using a variety of learning modes, incorporating practical and on-site/field experiences that facilitate the application of learning to current environmental practice.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
246	Completes regular program/course reviews, including evaluation of impact on students and other stakeholders.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
247	Assesses environmental expertise of instructional staff regarding current and emerging environmental issues and practice.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
248	Develops opportunities and processes to facilitate effective continuous learning of self and others regarding environmental issues and techniques.	-	-	-	-	-	-	-	-	X	-	-	-	-	-
SUB-CATEGORY 29: Evaluating/Mentoring/Supervising Students/Practitioners		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
249	Mentors students and environmental practitioners by advising, supervising, and challenging them to facilitate the development and application of new knowledge in their role as environmental practitioners and community partners in their role in the delivery of sustainable environmental practices.	-	-	-	-	-	X	X	-	X	X	-	-	-	-
250	Cultivates a stewardship approach within students and practitioners in the application of sound environmental practices within specific industries.	-	-	-	-	-	X	X	-	X	-	-	-	-	-
251	Evaluates the transfer of knowledge and skills, including comprehension of: the multidisciplinary nature of environmental practice, current best practices in industry, and the need for a global perspective for solving environmental problems.	-	-	-	-	-	-	-	-	X	-	-	-	-	-

### CATEGORY O: Environmental Research

SUB-CATEGORY 30: Designing/Developing Environmental Research and Development Proposals, Programs, and Projects		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
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252	Participates in taskforces and committees (set up by industry, governments or professional associations) to expand the body of knowledge on environmental research priorities, methodologies, and breakthroughs.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
253	Identifies research priorities and opportunities for funding, considering financial viability and other indicators such as, current environmental conditions, scientific knowledge gaps, need for industrial improvements, socio-economic and cultural factors.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
254	Defines the environmentally-related problem or opportunity and potential scientific, ecological or socio-economic benefits of conducting research (often including its practical application).	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
255	Conducts review of literature and existing data pertinent to the potential environmental research program/project.	-	-	-	-	-	X	-	-	-	X	X	-	-	-	-
256	Defines the scope, strategy and objectives for specific environmental research projects and programs, including appropriate quantitative and qualitative methodologies and tools.	-	-	-	-	-	X	-	-	-	X	X	-	-	-	-
257	Writes a proposal, communicating the scientific rationale behind the environmental research project to obtain funding and/or approval from internal, industry, government, or other sources.	-	-	-	-	-	X	-	-	-	X	X	-	-	-	-
258	Evaluates the technical, environmental and socio-economic merits of proposals (e.g. for determining eligibility and allocation of funds).	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
259	Develops a research action plan for the environmental project (e.g. establish budget, deliverables, timelines and human resource needs) for consideration by stakeholders and decision-makers.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
260	Identifies the laboratory, equipment and other site-specific needs for the environmental research program.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
261	Provides expert input for the recruitment of environmental research staff.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
<b>SUB-CATEGORY 31: Conducting Environmental Research/Publishing Results</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
262	Establishes the framework, baselines and benchmarks against which environmental research outcomes can be measured.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
263	Defines the specific methodologies and protocols appropriate to the environmental research project.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
264	Conducts science and social science environmental research (e.g. eco-toxicology studies, developing models, identifying optimal agri-chemical application rates, studies on environmental perspectives and the effectiveness of public education programs, etc.).	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
265	Provides expert guidance to others who may be assisting with the environmental research within or outside the organization.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
266	Analyzes the environmental research findings to determine if research objectives have been met, or if research methodologies need to be modified.	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
267	Develops recommendations for the application of the environmental research findings based on pilot testing and demonstration.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
268	Writes up the results of the environmental research in accordance with rigorous publishing guidelines (for publication in peer-reviewed journals, presentation at conferences, etc.).	-	X	-	-	-	X	X	-	-	-	X	-	-	-	-
269	Reviews other environmental researcher's reports, proposals, and publication papers to ensure their technical accuracy and soundness.	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
<b>SUB-CATEGORY 32: Developing/Coordinating/Implementing Energy Efficiency Programs</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
270	Develops energy efficiency programs such as Fleet Smart and ENFOR (energy from the forest).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
271	Identifies best practices, objectives, and targets for implementation of energy efficiency programs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
272	Implements the technological and process changes relevant to the energy efficiency programs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
273	Develops energy efficiency tracking systems.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
274	Monitors success of energy efficiency programs to identify and report on how closely objectives are met and what revisions are necessary.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUB-CATEGORY 33: Identifying/Implementing Activities Pertinent to Commercialization of Environmental Technologies, Systems &amp; Equipment</b>		<b>AQ</b>	<b>WQ</b>	<b>SAR</b>	<b>WM</b>	<b>EHS</b>	<b>FWL</b>	<b>NRM</b>	<b>E</b>	<b>ET</b>	<b>RD</b>	<b>PL</b>	<b>CPA</b>	<b>S</b>	<b>EM</b>	
275	Assesses the environmental implications of consumer behaviour and the resulting demand for products, services or natural resources.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
276	Assesses emerging opportunities for manufacturing or business start-ups and services in response to changing environmental policies and consumer demand.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
277	Advises on corporate strategies and product lines which take into account the drivers of environmental change and their impacts on consumer demand, regulatory changes, and competitive market forces.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
278	Articulates the concept and ideas for new environmental technological processes and equipment, such as technologies to remove greenhouse gases from the atmosphere or to destroy waste materials.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
279	Assesses the economic feasibility of new environment-related products and technologies, including biotechnologies such as new crop species.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

280	Determines objectives of the commercialization of new equipment or biotechnology products, considering environmental, technical, regulatory and financial constraints.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
281	Provides expert input to the preparation or evaluation of proposals to conduct environmental technology development projects (including responding to RFP and preparing unsolicited proposals).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
282	Develops new products and species, such as crops, trees, fish, etc. with the long term goal to reduce the burden on the natural resources and ecosystems.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
283	Conducts laboratory-scale experiments to determine feasibility of proposed technologies/equipment.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
284	Guides the development of new products and equipment from prototype to commercial scale, including trials of new agri-chemicals and their applications.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
285	Conducts product and/or process life cycle analysis, including end-products, constituents used to produce them, and the methods used to dispose of them (focussing especially on the environmental implications over the full life cycle).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
286	Develops improvements that will make the products (or the processes in which they are used or by which they are made) safer or more environmentally acceptable.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
287	Provides expert input to the marketing and sales of environmental products or services (i.e. technical sales and ongoing client services).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**CATEGORY Q: Environmental and/or Sustainability Communications & Public Awareness**

<b>SUB-CATEGORY 34: Developing/Implementing Environmental and/or Sustainability Communications and Awareness Programs</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
288	Demonstrates an understanding of the fundamental relationships between human activities and the natural environment.	-	X	-	-	-	X	X	-	X	-	-	X	X	-
289	Demonstrates an understanding of the Canadian environmental sector and sustainability issues.	-	-	-	-	-	-	X	-	X	-	-	X	X	-
290	Demonstrates a working knowledge of environmental legislation, regulation, standards and voluntary agreements	-	-	-	-	-	X	X	X	-	-	X	X	X	X
291	Demonstrates an understanding of the role of communications in increasing public awareness of environmental and/or sustainability issues.	-	-	-	-	-	-	X	-	X	-	X	X	X	X
292	Develops compelling, well researched and strategic proposals for approval and/or funding of environmental communication/awareness programs.	-	-	-	-	-	-	X	-	-	-	-	X	-	-
293	Develops communications and public relations strategies to address employee and public concerns about environmental and/or sustainability issues and risks and/or to promote the environmental and/or sustainability interests of the organization.	-	-	-	-	-	-	X	-	-	-	-	X	X	-
294	Provides expert input to the development of a marketing/communication plan to promote/fully describe the organization's environmental capabilities and accomplishments.	-	-	-	-	-	-	-	-	-	-	-	X	-	-
295	Ensures the creation (research, writing, and design) of web-based and print communications and educational resources in support of the environmental communications strategies.	-	-	-	-	-	-	-	-	-	-	-	X	-	-
296	Develops means to address constraints, sensitivities, or opposing views on environmental concerns so that the message reaches the designated target audience(s) (using a variety of formats such as printed materials, videos, internet, CD ROMs).	-	-	-	-	-	-	-	-	-	-	-	X	-	-
297	Establishes goals for environmental and/or sustainability awareness programs that will help ensure the intended message is accurately conveyed to the appropriate target audience.	-	X	-	-	-	-	-	-	X	-	-	X	X	-
298	Develops the content of environmental and/or sustainability awareness programs.	-	-	-	-	-	-	-	-	-	-	-	X	X	-
299	Makes presentations to a variety of audiences to build awareness of environmental and/or sustainability issues, concerns and/or programs.	-	-	-	-	-	-	-	X	X	-	-	X	X	-
300	Promotes environmental and/or sustainability programs and their implementation with media, outside audiences, organizations, etc.	-	-	-	-	-	-	-	-	-	-	-	X	X	-
301	Assesses the effectiveness of environmental and/or sustainability communications/awareness programs in attaining their goals.	-	-	-	-	-	-	-	-	-	-	-	X	X	-
732 (NEW)*	Delivers training programs to promote public awareness on environmental and/or sustainability issues	-	-	-	-	-	-	-	-	-	-	-	X	-	-
<b>SUB-CATEGORY 35: Presenting Expert Information on Environmental Matters</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
302	Manages customer relations on environmental and/or sustainability matters that builds productive partnerships with clients, suppliers and other stakeholders	-	-	-	-	-	-	X	X	-	-	-	X	-	-

<b>303</b>	Manages media relations concerning environmental matters to build, foster and sustain a positive public image for the organization.	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
<b>304</b>	Acts as the organization's spokesperson concerning environment-related issues and inquiries (e.g. health & safety, contamination of air, water, soil/water, etc.).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>305</b>	Conducts informational meetings to identify community and stakeholder priorities on environmental issues and concerns.	-	-	-	-	-	-	X	-	X	-	-	-	X	-	-
<b>306</b>	Identifies current environment-related trends and top companies/thought leaders in the global environmental business sector for the selection of content and speakers for conferences, seminars, focus groups, public consultations and forums.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>307</b>	Participates as a speaker, panellist, witness, or expert in conferences, public forums on environment-related topics and issues, or hearings (such as defending the Environmental Impact Assessment report).	-	-	-	-	-	-	-	-	X	-	-	-	X	-	-
<b>308</b>	Critiques environmental reports, proposals, and publications of peers or staff.	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-

**CATEGORY R: Energy Management, Energy Efficiency and Renewable energy**

<b>SUB-CATEGORY 36: Creating, Managing and/or Implementing Energy Management and Energy Efficiency Strategies, Initiatives, Projects and Programs.</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
<b>711 (NEW)*</b>	Understands concepts related to generation, transport, installation, operation, and maintenance of technologies and related equipment used to produce energy	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>712 (NEW)*</b>	Advices in the development of energy management strategies on renewable energy use, reduction of GHG emissions or improving energy efficiency.	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>713 (NEW)*</b>	Assess economic feasibility of products and technologies aimed at reducing energy demand and use and/or improving energy efficiency	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>714 (NEW)*</b>	Identifies targets, best practices and objectives to reduce energy demand or use and/or improve energy efficiency	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>715 (NEW)*</b>	Develops or participates in developing plans, initiatives, projects or programs to reduce energy demand or use and/or improve energy efficiency	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>716 (NEW)*</b>	Implement plans, initiatives, programs, projects or activities to reduce energy demand or use and/or improve energy efficiency	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>717 (NEW)*</b>	Monitors and/or reports performance of energy management plans, initiatives, programs, projects or activities aimed at reducing energy demand or energy use and/or improving energy efficiency	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>SUB-CATEGORY 37: Managing and/or Implementing Renewable Energy Related Strategies, Initiatives, Projects and Programs</b>		AQ	WQ	SAR	WM	EHS	FWL	NRM	E	ET	RD	PL	CPA	S	EM
<b>718 (NEW)*</b>	Develops or participates in developing plans, initiatives, projects or programs to increase use of renewable energy or reduce greenhouse gas emissions in meeting production or building operations' needs	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>719 (NEW)*</b>	Implements energy management activities aimed at use of renewable energy or reduction of greenhouse gas emissions to meet production or building operations needs	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>720 (NEW)*</b>	Monitors performance of energy management plans, initiatives, programs, projects or activities aimed at using renewable energy or reducing greenhouse gas emissions while meeting production or building operation	-	-	-	-	-	-	-	X	-	-	-	-	-	-
<b>721 (NEW)*</b>	Provides advice about energy consumption and greenhouse gas emissions that conform to standard protocols, legislated requirements and/or industry best practices.	-	-	-	-	-	-	-	X	-	-	-	-	-	-

\*Denotes new competencies, added to the NOS since the last publication in 2011. These competencies are numbered in the 6 and 7 hundreds, to be distinguishable from the pre-existing one

The logo for 'eco canada' features the word 'eco' in a lowercase, sans-serif font, followed by a stylized outline of a maple leaf, and then the word 'canada' in a lowercase, sans-serif font. The background of the entire page is a soft-focus photograph of a hand holding a yellow maple leaf against a bokeh of light green and white circles.The wordmark for 'Canada' is in a bold, serif font. A small Canadian flag is positioned above the letter 'a'.

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*Competencies for Environmental Professionals in Canada*

National Occupational Standards  
Environmental Careers Organization of Canada



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