



**ALBERTA INSTITUTE
OF AGROLOGISTS**

2017

Land Reclamation Practice Standard



Approved by the AIA Council

5/18/2017

Preface

This practice standard is part of the continuing effort by the Alberta Institute of Agrologists (AIA) to meet its mandate as outlined in the *Agrology Profession Act*. The *Act* specifies that the Institute must establish, maintain and enforce standards of practice as part of the profession's obligation to protect the public in matters related to agrology.

This document was created by the AIA with assistance from a Practice Area Expert Committee (PAEC) consisting of four regulated members of the AIA. Members were selected for their expertise and long standing practice in land reclamation.

This practice standard is the basis upon which practice reviews will be conducted by the AIA. This document will assist members in ensuring that their professional practice meets the standards for education, work experience, skills and performance required for professionals practicing in land reclamation.

This document will be reviewed periodically to ensure it is up to date with current standards and state of knowledge for the practice area.

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The PAEC was chaired by Dr. Les Fuller P.Ag (Fuller Heit Land and Environment Ltd.)

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Table of Contents

Preface	1
Acknowledgments	2
List of Tables	4
1. INTRODUCTION.....	5
1.1. Objectives.....	5
1.2. Definitions.....	5
2. SCOPE OF THE PRACTICE AREA.....	6
2.1 Understanding Drivers and Project Planning	7
2.2 Project Execution.....	7
2.3 Monitoring.....	7
2.4 Verification.....	7
3. KNOWLEDGE REQUIREMENTS	7
4. WORK EXPERIENCE	9
4.1 Years of Experience	9
4.2 Skill Sets.....	11
5. PERFORMANCE REQUIREMENTS.....	12
6. REFERENCE MATERIAL	13
7. SUMMARY.....	14
Appendix.....	16

List of Tables

Table 1. Knowledge Requirements for the Land Reclamation Practice Area	8
Table 2. Work Experience	9
Table 3. Required Skill Sets for the Land Reclamation Practice Area	11

1. INTRODUCTION

This practice standard applies to regulated members of the Alberta Institute of Agrologists (AIA) who practice or intend to practice in the Land Reclamation practice area. It defines expectations and outlines requirements regarding professional practice within this area of practice. Documentation of these requirements provides necessary assurance to the public that the Agrology profession has identified requirements for professional practice. Members will then have a benchmark from which to assess their practice and identify potential learning needs in their continuing competence program.

Professional Agrologists and Registered Technologists in Agrology bring their knowledge about agriculture, ecology, hydrology, soils, vegetation and reclamation equipment to the practice of land reclamation. Specifically, this knowledge includes the following:

- Soil chemistry, soil physics, soil biology and soil fertility.
- Soil salvage, soil conservation and soil handling.
- Plant-soil interactions related to nutrient and water use.
- Crop production technologies.
- Landscape scale analysis and interpretation of site and surrounding area.
- Recommendations and use of soil amendments.
- Developing land reclamation techniques.
- Understanding and supervising heavy equipment and agricultural equipment.
- Sampling and classification of soils, plants and water.
- Hydrologic processes essential to land reclamation.
- Site drainage planning and management.
- Vegetation selection, handling and planting.
- Weed and invasive species identification and management.
- Ecological processes and interactions among ecosystem components.
- Land capability assessment and land use planning.

This practice standard forms the basis for implementation of a practice review protocol for this practice area. Members working within this practice area will be able to request a review of their professional practice based on this practice standard. Such a review will provide valuable input for areas of improvement.

1.1. Objectives

The objectives of this practice standard include the following:

- Identify and define the education, experience, skills and performance requirements for professional practice within the practice area.
- Provide documentation of these requirements so regulated members of AIA may assess their practice against this standard and identify learning needs to ensure they meet the standard.
- Provide a standard against which member's professional practices may be reviewed by a peer review committee to assist members in identifying areas that may need improvement.
- Provide a mechanism whereby AIA can demonstrate that the profession is managed in a manner that protects the interests of the public in matters related to land reclamation work conducted by regulated members of the AIA.

1.2. Definitions

Competence: The ability to perform certain tasks in a professional practice based on educational training, skills and work experience in a manner that meets performance objectives as defined in a practice standard.

Core Knowledge Area: A general area of knowledge consisting of one or more specialized subject matter areas that are required for practice within a particular practice area (e.g. soils, vegetation and water).

Direct Supervision: Guidance and direction provided by a competent professional who accepts responsibility for work conducted by a less experienced professional.

Experience: Knowledge or practical wisdom gained from observation or doing.

Performance: The exercise of knowledge in a professional practice that demonstrates the required ethical conduct and wise judgment as specified within a practice standard.

Practice Area: A unique functional area of professional practice within the agrology profession that requires specialized knowledge, based on education, work experience and skill sets.

Practice Area Expert Committee: A committee of experts who have demonstrated through their professional practice that they have a comprehensive understanding of the requirements for professional practice in a practice area.

Practice Review: A process whereby a peer review panel examines a regulated member's professional practice against a practice standard, to provide input on practice improvement.

Practice Standard: A document that outlines requirements and expectations for professional practice within a practice area.

Professional Practice: The competent and ethical provision of specialized knowledge, recommendations and assessments based on education, work experience and skill sets while being accountable to peers as a regulated member of a professional regulatory organization.

Regulated Member: A member in good standing with the Alberta Institute of Agrologists who holds one of the following designations: PAg (Professional Agrologist) RTAg (Registered Technologist in Agrology), AIT (Agrologist in Training) or ATT (Agrology Technologist in Training).

Skill: An ability developed over multiple years of work experience in a professional practice.

Subject Matter Area: A specialized area of knowledge required for professional practice within a particular practice area (e.g. soil chemistry, plant physiology, hydrology).

2. SCOPE OF THE PRACTICE AREA

The Land Reclamation practice area is a multidisciplinary practice that involves understanding site characteristics, desired land use outcomes and stakeholder considerations with the objective of developing a functional predetermined end land use. Land reclamation involves developing and implementing a reclamation plan that considers and integrates logistical, management and biophysical considerations. Execution of a reclamation plan may include site contouring for landscape drainage and stability; soil replacement and/or treatment; revegetation; weed and herbivore management; and contractor supervision and management. Reclamation monitoring provides feedback so that appropriate adaptive site management activities can be implemented. Detailed site assessments are required for verification that reclamation objectives have been met when site closure is required. Land reclamation practitioners are knowledgeable of relevant regulatory requirements and provide competent and ethical recommendations to stakeholders based on sound scientific principles, experience and economic considerations.

Land reclamation may be required on lands that have been subjected to various disturbances that may include contamination. The Land Reclamation practice area does not include activities related to assessment, management and remediation of contaminated land (e.g. Phase 1

Environmental Site Assessment, Phase 2 Environmental Site Assessment, Remediation, Risk Assessment and Risk Management). Where land disturbance has included contamination, land reclamation usually follows the completion of remedial activities..

The work involved in land reclamation can be grouped into four main categories which include:

- Understanding drivers and project planning.
- Project execution.
- Monitoring.
- Verification.

2.1 Understanding Drivers and Project Planning

Drivers are the requirements and obligations to complete land reclamation work. The drivers for land reclamation are varied and could include regulatory requirements, land use requirements, stakeholder expectations and societal considerations. Understanding drivers assists the professional in project planning, defining project objectives and achieving project completion.

A project plan is important as it lays out the steps involved in executing a land reclamation project. The plan is developed to ensure that the drivers are addressed and the project objectives are met; it acts as a reference document for project execution.

2.2 Project Execution

Project execution is the implementation of the project plan. Project execution includes overall project management, ensuring compliance with regulatory requirements and approvals, ongoing alignment with the project plan or adapting the plan if required, working with stakeholders and contractors.

2.3 Monitoring

Monitoring involves ongoing evaluation over time to determine reclamation success. It could include data collection, data analysis and interpretation, adaptation of the project plan, assessing the need for additional site management, stakeholder communications, documentation and reporting.

2.4 Verification

Verification involves ensuring the work is complete and confirming that reclamation objectives have been met. It could include completion of detailed site assessments and comparison against regulatory criteria, submission of an application for reclamation certification, documentation and reporting on project completion and stakeholder communications.

3. KNOWLEDGE REQUIREMENTS

Knowledge requirements are technical or scientific areas of knowledge essential to professional practice within the practice area. They consist of core knowledge areas comprised of one or more specialized subject matter areas that are foundational to the practice area (Table 1).

The specification of subject matters within each required core knowledge area provides assurance that members working within a practice area have the necessary knowledge to practice. The subject matters within each core knowledge area represent areas of study equivalent to a three credit course in a post-secondary educational institution. Subject matter knowledge is normally obtained through educational training in a degree or diploma program;

however, knowledge in certain subject matter areas may be supported by subsequent work experience or self study. To assure the public that practitioners have acquired knowledge via work experience or self study, knowledge needs to be validated through a challenge exam process implemented by the AIA.

Where regulated members do not meet a knowledge requirement for a core knowledge area, they will be required to address the deficiency by doing one of the following:

- Obtain credit in a formal course from an appropriate educational institution or from an industry course approved by the AIA. Such courses must have an adjudicated examination to document knowledge gained.
- Write a professional practice examination supplied by the AIA to demonstrate that knowledge has been attained in the subject matter that is lacking.
- Appear before a panel of peers to complete an oral examination supplied by the AIA to demonstrate that knowledge has been attained in the subject matter that is lacking.
- Recognize the limits of their expertise in the subject matter that is lacking and seek advice and direction from a qualified professional depending on the nature of work being conducted. Members are expected to address this deficiency in their continuing competence program.

Table 1. Knowledge Requirements for the Land Reclamation Practice Area

Core Knowledge Area	Subject Matter Areas	Rationale
Ecology	<ul style="list-style-type: none"> • Introductory Ecology 	Knowledge of interrelationships among ecosystem components is required.
Water	<ul style="list-style-type: none"> • Introductory Hydrology 	Knowledge of the hydrologic cycle and behavior of water in soils and the landscape is required.
Soils	<ul style="list-style-type: none"> • Introductory Soil Science • Soil Genesis and Classification And at least one: <ul style="list-style-type: none"> • Soil Chemistry • Soil Physics • Soil Fertility • Soil Biology • Soil Conservation • Soil Biogeochemistry 	Knowledge of soil formation and classification and advanced understanding of soil processes and properties is required.
Vegetation	<ul style="list-style-type: none"> • Introductory Plant Science And at least one of: <ul style="list-style-type: none"> • Plant Identification and Taxonomy • Community Ecology • Weed Science • Plant Physiology • Plant Pathology • Range Management • Forest Ecology 	Knowledge of plant identification and taxonomy and advanced understanding of vegetation interaction with its environment is required.
Knowledge of a subject matter area may be based on an individual course or be part of multiple courses. For example, knowledge in water may be obtained via an introductory hydrology		

course or through portions of other courses such as soil conservation or soil physics.

4. WORK EXPERIENCE

Work experience represents a source of knowledge gained through professional practice rather than through education. Such experience facilitates development of logistical and practical knowledge and skill sets needed to achieve competence within the practice area. Experiential knowledge and skill sets are developed in an environment where feedback is available. With progressive experience comes a breadth of knowledge and perspective that facilitates strategic thinking and problem solving.

4.1 Years of Experience

Three levels of work experience are recognized within this practice standard. It is important that practitioners recognize the limitations of their expertise and do not accept work duties and responsibilities that are beyond their experience level unless the work is conducted during training under supervision (Table 2).

Junior level (< 5 years of experience in land reclamation). The junior level of experience coincides with entry level personnel who have recently graduated from an appropriate educational program and have up to 5 years of relevant work experience. This work experience is conducted under supervision of a qualified practitioner within the practice area. Practitioners at the junior level are considered to have insufficient experience to sign off on reports, maps and other work products. This is consistent with expectations of the Government of Alberta regarding professional sign-off on regulatory documents.

Intermediate level (5 to < 10 years of experience in land reclamation). Intermediate practitioners no longer require direct supervision and have developed the necessary skills and obtained the necessary experiential knowledge to take responsibility for their work. They can sign off on reports, regulatory applications and other documents. They often act in a supervisory role for junior personnel and report to senior personnel.

Senior level (typically > 10 years of experience in land reclamation). Senior practitioners provide supervision and often act as mentors to intermediate and junior personnel. They are recognized as knowledge experts by their peers and act as key stakeholder representatives for their companies. They play a key role in business development, project management and in providing strategic direction. They are responsible for work quality in their companies and act as primary liaisons with regulators.

Table 2. Work Experience

Experience Level	Years of Experience	Examples of Typical Job Level Duties and Key Responsibilities	Supervision and Professional Sign-off
Junior	< 5 years	<ul style="list-style-type: none"> • Conduct desktop work and literature review for projects. • Participate in project planning and project execution with senior personnel. • Follow standard operating procedures: sampling, data entry, analysis and reporting under supervision. • Collect field data. • Interpret data under supervision. 	<ul style="list-style-type: none"> • Requires direct supervision. • Cannot exercise professional sign-off.

		<ul style="list-style-type: none"> • Develop personal understanding of their expertise limitations and seek advice from senior professionals. 	
Intermediate	5 - < 10	<ul style="list-style-type: none"> • Plan and execute projects. • Develop work plans. • Make recommendations or decisions on project execution. • Review and recommend changes to standard operating procedures. • Make decisions in field operations. • Collect field data. • Analyze and interpret data. • Write and deliver reports. • Manage projects, contractors and staff. • Engage with stakeholders. • Communicate and liaise with regulatory personnel and landowners. • Manage stakeholders. • Manage contractors. • Provide mentorship. • Receive mentorship. • Aware of their expertise limitations and seek advice from other professionals. 	<ul style="list-style-type: none"> • May supervise junior personnel. • Can exercise professional sign-off on reports, regulatory applications and other work products. • Accountable to senior supervisors and managers.
Senior	≥10	<ul style="list-style-type: none"> • Collect and interpret data. • Write and deliver reports • Act as technical advisor. • Develop, review and sign-off on standard operating procedures. • Provide mentorship. • Receive mentorship in subject areas where they have limited expertise. • Sponsor projects. • Engage stakeholders. • Develop and manage project quality assurance and quality control. • Manage personnel. • Understand and represent stakeholder and public interests. • Act as a key representative for their company. • Accountable for overall project development, execution, completion and stakeholder satisfaction. • Liaise with regulatory personnel. • Provide strategic planning, business development and decision making. • Has financial decision making responsibilities. • Aware of their own expertise limitations 	<ul style="list-style-type: none"> • Can conduct senior review and sign-off on reports, regulatory applications and other work products. • Can undertake supervisory and management roles.

		and seek advice from other professionals.	
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4.2 Skill Sets

Certain skill sets are required for a practitioner to be proficient within the Land Reclamation practice area. Application of scientific or technical knowledge requires skill sets identified within this practice standard. Skill sets are vital to effective functioning within the practice area and are usually developed during work experience, mentoring and/or professional development courses.

Table 3 provides a descriptive list of skill sets required for practicing land reclamation. Members practicing in the Land Reclamation practice area are required to work towards developing these skill sets by undertaking continuing competence programs to address those that are lacking.

Practitioners are advised to consult the competencies table for reclamation in the document Competencies for Remediation and Reclamation – Advisory Committee Recommendations Report (Alberta Environment 2006).¹

Table 3. Required Skill Sets for the Land Reclamation Practice Area

Required Skill Sets	Description
Regulatory understanding and application	Required to ensure the public is protected through compliance with legislation, regulations, policies, guidelines and standards.
Safety and hazard assessment	Required to ensure necessary safeguards are in place to maintain the safety of people, infrastructure and the environment. Environmental professionals are expected to be safety management leaders. Usually obtained through short courses on safety pertinent to hazards at the workplace or for activities being conducted. Some safety courses are related to H ₂ S, ground disturbance, equipment or construction activities, hazard assessment and control, all-terrain vehicle operation, fire control and suppression, WHMIS and first aid.
Site interpretation	Assessing and interpreting site temporal and spatial variability (i.e. soils, terrain, vegetation, drainage, surface water and groundwater) is important for land reclamation. Such understanding must be integrated into the reclamation plan and accounted for during project execution, monitoring and verification.
Land capability assessment	Assessing pre-reclamation and post-reclamation land capability to determine if equivalent land capability has been achieved. Includes the ability to use different land capability classification systems depending upon type of disturbance, land use, regulations and stakeholder requirements. Using results of the pre-reclamation assessment is an important part of developing reclamation plans.
Project planning and management	Required to ensure stakeholder expectations are met. Includes proposal and budget preparation, project plan development and implementation, ongoing assessment and alignment of project plan and objectives, cost tracking and management, project integration and completion, and safety management.
Sampling, data	Required to ensure data meet quality standards by using documented

¹ Alberta Environment 2006. Competencies for Remediation and Reclamation. Advisory Committee Recommendations Report. Alberta Environment, Edmonton, Alberta. 16 pp.

collection, management and validation	sampling protocols (e.g. sample collection and handling, chain of custody, data analysis, quality assurance and quality control) and management protocols to provide credible and defensible data.
Relationship building, management and communication with stakeholders and regulators	Relates to establishing and maintaining relationships and communications with regulators, subcontractors, clients and other stakeholders. Communication is essential to ensure reclamation drivers are accounted for and incorporated into project objectives and stakeholder expectations are understood and met or appropriately managed.
Understanding earth moving, soil handling activities, heavy and agricultural equipment capabilities	Developed through mentorship from other professionals and communication and field operations with contractors responsible for earth moving and soil handling. Understanding equipment limitations and capabilities is fundamental to land reclamation.
Understanding land management systems	Developed through courses and in-field interaction with agricultural producers, foresters, rangeland managers. Understanding land production cycles and equipment is fundamental to land reclamation.
Contractor management	Working with contractors and understanding the sequence and logistics of site management activities is critical.
Documentation and reporting	Documenting rationale for decisions and conclusions is a key professional requirement. Expressing results, professional opinions and conclusions based on supporting data in an appropriate, clear and concise reporting format is important.

5. PERFORMANCE REQUIREMENTS

In addition to the General Practice Standard that applies to all AIA members (see Appendix), specific performance requirements have been developed for this practice area. This practice standard identifies education, work experience and skill set requirements for competent practice and defines the performance expected of regulated members participating in the practice area.

The following performance requirements outline the expectations of the professional practicing within the Land Reclamation practice area. Failure to comply with these expectations may be considered as constituting unprofessional conduct under the Agrology Profession Act.

Regulated members stay current with land reclamation research, legislation, directives, guidelines, industry standards and other reference documentation related to land reclamation.

Regulated members:

- Regularly review the reference material used to support their practice and obtain most current versions when available.
- Attend conferences workshops and updates related to land reclamation.
- Communicate with regulators, research scientists, educators and other practitioners to ensure they remain current with current land reclamation knowledge and trends.

Regulated members understand the limits of their knowledge, skills and experience and seek the expertise of other professionals where necessary.

Regulated members:

- Make appropriate scientific, technical, practical and logistical decisions based on their education and experiential knowledge in land reclamation.

- Apply their skills and use sound judgement in an ethical manner.
- Seek advice and input from other professionals when their expertise is insufficient to make competent decisions and recommendations.

Regulated members clearly understand their role within the practice area.

Regulated members:

- Understand their role in a Land Reclamation project and do not exceed the boundaries of that role.
- Do not accept Land Reclamation work that is beyond their expertise and work experience level unless they conduct it under the direct supervision of a qualified regulated professional.
- Only accept responsibility for another professional's work when they are confident, through direct supervision or interaction, that the professional has completed the work in a competent manner.

Regulated members clearly understand a project's scope and terms of reference and ensures alignment with a project execution plan.

Regulated members:

- Understand the objectives, scope and deliverables for a project and work within the terms of reference for the project.
- Use a consistent and thorough process for management of a project.
- Regularly review the project execution plan and approved budget to ensure alignment with project goals and objectives.

Regulated members strive for continuous improvement.

Regulated members:

- Seek advice from other professionals to enhance their knowledge of Land Reclamation practices.
- Participate in knowledge sharing with other members to advance professional practice in Land Reclamation.
- Document best management practices in Land Reclamation and implement these practices where feasible.

Regulated members review the requirements of this practice standard and address any practice deficiencies through their ongoing continuing competence program.

Regulated members:

- Conduct self-assessments based on education, work experience, skill set and performance requirements indicated within this practice standard.
- Review their self-assessment with a senior qualified professional.
- Identify any deficiencies and develop a plan to address them.
- Regularly participate in the AIA continuing competence program as required by the Agrology Profession Act.

6. REFERENCE MATERIAL

The following are some recommended references useful for practitioners in the Land Reclamation practice area. This list is not intended to be a complete list of references.

Alberta Agriculture 1985. Weeds of Alberta. Alberta Agriculture, Alberta Environmental Centre. 209 pp

Alberta Environment. 2004. Guide to the Code of Practice for Pits. Alberta Environment. Edmonton, Alberta. 84 pp.

Alberta Environment. 2006. Competencies for Remediation and Reclamation. Advisory Committee Recommendations Report. Alberta Environment. Edmonton, Alberta. 16 pp.

Alberta Environment. 2010. Guidelines for Reclamation to Forest Vegetation in the Athabasca Oil Sands Region, 2nd Edition. Terrestrial Subgroup of the Cumulative Environmental Management Association. Fort McMurray, Alberta. December 2009.

Cumulative Effects Management Association (CEMA). 2014. Guidelines For Wetland Establishment On Reclaimed Oil Sands Leases. 3rd Edition.

Environment and Parks. 2015. Reclamation Criteria for Wellsites and Associated Facilities for Peatlands. Edmonton, Alberta. October 2015. 142 pp.

Environment and Sustainable Resource Development (ESRD). 2013. 2010 Reclamation Criteria for Wellsites and Associated Facilities for Cultivated Lands (Updated July 2013). Edmonton, Alberta. 92pp.

Environment and Sustainable Resource Development (ESRD). 2013. 2010 Reclamation Criteria for Wellsites and Associated Facilities for Forested Lands (Updated July 2013). Edmonton, Alberta. 81pp.

Environment and Sustainable Resource Development (ESRD). 2013. 2010 Reclamation Criteria for Wellsites and Associated Facilities for Native Grasslands (Updated July 2013). Edmonton, Alberta. 92 pp.

Gerling, H.S., M.G. Willoughby, A. Schoepf, K.E. Tannas and C.A. Tannas. 1996. A Guide to Using Native Plants on Disturbed Lands. Alberta Agriculture, Food and Rural Development and Alberta Environmental Protection. 247 pp

Hardy BBT Limited 1989. Manual of Plant Species Suitability for Reclamation in Alberta- 2nd Edition. Land Conservation and Reclamation Council Report No. RRTAC 89-4. 436 pp.

Pedocan Land Evaluation Ltd. 1993. Soil Series Information for Reclamation Planning in Alberta. Alberta Conservation and Reclamation Council Report No. RRTAC 93-7. ISBN 0-7732.6041-2. Edmonton, Alberta. 402 pp.

7. SUMMARY

This document describes the educational requirements, work experience, skill set and performance expectations for professional practice within the Land Reclamation practice area for the Agrology profession. It provides direction to members of the Alberta Institute of Agrologists who are practicing or who wish to practice within this practice area to ensure they are qualified to conduct work in this area.

Members practicing within this practice area are required to review this document and assess their educational background, work experience, skill sets and performance against the requirements and expectations herein. Where deficiencies are noted members are expected to develop a plan to address these deficiencies through their individual continuing competence programs. Members are expected to understand the limits of their own knowledge and expertise and seek additional advice and professional support as required.

This practice standard will form the basis of ongoing practice reviews conducted by the Institute and the basis for review should a member be subject to a complaint. It is the responsibility of the member to be aware of the contents of this practice standard.

Appendix

The following General Practice Standard applies to all registered members of the AIA. This General Practice Standard is to be adhered to as well as this detailed practice standard for the Land Reclamation practice area.

GENERAL PRACTICE STANDARD FOR ALL REGISTERED MEMBERS OF THE ALBERTA INSTITUTE OF AGROLOGISTS

The General Practice Standard applies to all registered members of the Alberta Institute of Agrologists. The purpose of the document is to describe the duties and responsibilities that are incumbent upon each member of the profession. It is the responsibility of each registered member to conduct themselves in accordance with these standards. Registered members will be measured against these standards by the Institute, the public, employers, clients and colleagues. The Standard describes the values of the Institute and the profession, and the expectation for each registered member.

PROFESSIONAL RESPONSIBILITY

Each registered member of the Alberta Institute of Agrologists (AIA) is required to uphold the standards and reputation of the agrology profession and professional principles.

Indicators

The registered member has a duty to protect the public and to conduct his or her work with an appropriate standard of care.

Standard of care: Standard of care is the legal duty to exercise the watchfulness, attention, caution and prudence that a reasonable professional in the same circumstances would exercise. If a professional's actions do not meet this standard the professional may be found negligent or to have committed unprofessional conduct.

The registered member is personally responsible and accountable for ensuring that his or her agrology practice and conduct meet the requirements of the practice area(s), practice standards, current legislation, regulations and policy.

The registered member will practice with honesty, integrity and respect, and comply with the AIA's Code of Ethics.

The registered member will sign or co-sign a report only if he or she is willing to accept full responsibility for the contents of the report.

The registered member may delegate portions of the work to competent practitioners under the registered member's direct supervision. The registered member will accept responsibility for that work and provide additional quality assurance/quality control to determine the sufficiency of that work. Registered members will not sign any document for which they will not take full responsibility for the contents of the document.

The registered member will hold the public interest paramount and endeavor to put service above gain and excellence above quantity.

COMPETENCY

The registered member will practice only in an area(s) where the member has demonstrated competence.

Indicators

The registered member will only practice unsupervised in the practice area(s) where the member's education, skills, and experience fulfill the practice area qualifications and the registered member believes he or she is competent. If a registered member's education, skills, and experience do not meet the requirements of the practice area, the member will practice *only* under the direct supervision of a qualified, registered professional who is competent to do the work and who will give appropriate direction to the registered member.

The registered member, if called upon by the profession, a judicial review or a court ordered request, must be able to clearly demonstrate the knowledge and skill sets gained to enable them to practice in any practice area(s) in which the member deems himself or herself competent to practice.

The registered member will undertake continuing professional development (CPD) with the majority of the CPD hours directly relevant to his or her practice area(s). The registered member commits to reporting his or her CPD activities on the member profile as activities are completed.

The registered member will continually update his or her scientific and standard industry practice knowledge related to the member's practice area(s).

The registered member will demonstrate critical thinking when planning, implementing and evaluating all aspects of the work and making any recommendations as a professional.

The registered member is able to show his or her reasoning in reaching decisions through accurate and clearly written documentation.

The registered member will advise the AIA of any changes to his or her practice area(s), particularly when a new practice area is chosen. The registered member will specify the knowledge and skills that have been acquired to support work in the new practice area.

PROVISION OF SERVICE TO THE PUBLIC, A CLIENT OR AN EMPLOYER

The registered member will promote the qualified, competent and ethical professional role and accountability of agrologists to the public, other professionals, and themselves.

Indicators

The registered member will prepare accurate, concise and clearly written reports and correspondence that are appropriate for the intended audience.

The registered member will communicate clearly and respectfully with a variety of people, including his or her employer, colleagues, clients, members of the public and regulators.

The registered member will advise the client if the work is outside of his or her practice area(s) and if the member will be unable to fulfil the terms of reference for the work.

The registered member will make a referral to seek advice, and enter into collaborations with other professionals in situations which require expertise that extend beyond the member's competence.

The registered member will avoid situations where a conflict of interest exists or where the duties and loyalty owed by a member to one party likely will be, is, has been, or perceived to be, in conflict with the duties or loyalties the member owes to another party.

The registered member will extend public knowledge of their area of expertise whether it is in agriculture, the environment, food sciences or life sciences, and promote factual and accurate statements on matters regarding these areas.

STEWARDSHIP

The registered member will advocate and practice good stewardship of all agricultural and environmental resources based on sound scientific principles.

Indicators

A registered member will consider monetary issues, social values, rational application of sound science, lesson of valid experiences, economic impacts to the geographic region, and impacts on future generations when conducting his or her work.

A registered member will inform the client or employer of any action planned or undertaken by the client or employer that he or she believes is detrimental to good stewardship or in breach of known legislation, regulations or policies.

SAFETY

The registered member understands his or her obligation for promoting public and worker safety and considers the health of the environment, health of the consumer, industrial safety, construction safety and the general operational safety of projects.

Indicators

A registered member will demonstrate concern for the immediate and long-term direct effects of agricultural and environmental practices on the safety of workers by being aware of, and evaluating risks.

A registered member will balance the claims of producers and needs and wants of a consuming public against the potentially competing claims for safety of the environment and the interests of individuals and businesses affected by their proximity to agricultural operations. The registered member is aware that the public expects and demands a safe supply of food, not only for current use but also for future generations.