Cracking the Competency Code

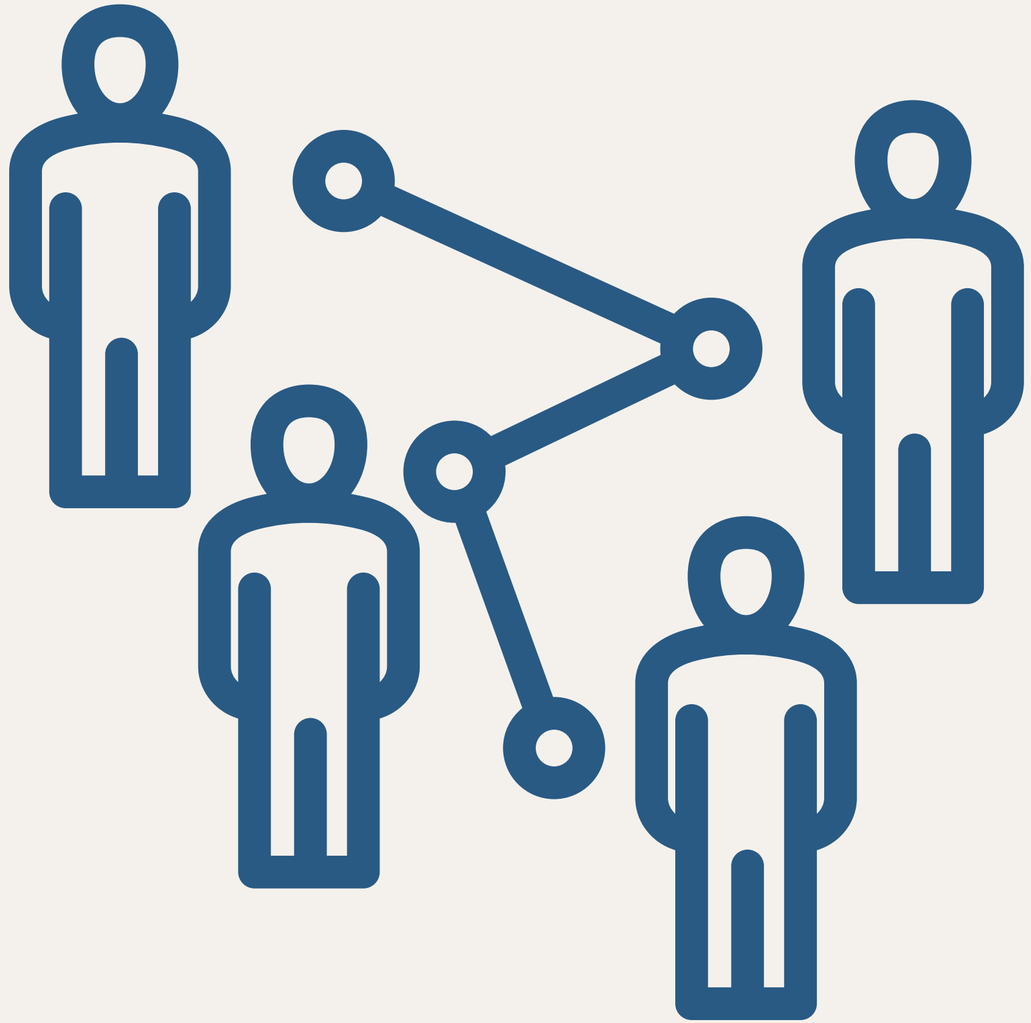
Building the Talent Pipeline for Public Reporting

Jacqui Coombes

Chair, **Mining3**
Chair **Minerals Reporting Australia**
MD **SageAbility**

SAGEABILITY

How do we develop a CQP Talent Pipeline?



*CQP = Competent /Qualified Person

SAGEABILITY

The Competency Tension

SAGEABILITY

The Competency Tension

CRIRSCO , 2024

Definition	3.6	**A Competent Person is a minerals industry professional, who is a *[National Reporting Organisation (NRO) to insert appropriate membership class and name of Professional Organisation (PO)]* or other Recognised Professional Organisations (RPOs) with enforceable disciplinary processes including the powers to suspend or expel a member.** **A Competent Person must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking.**

Criteria:

- Membership of XXX
- minimum 5 years RELEVANT EXPERIENCE in style OR type of deposit
- minimum 5 years RELEVANT EXPERIENCE in activity

SAGEABILITY

The Competency Tension

Coombes (2013)

> A JORC Code Competent Person is a mining industry professional who has a mature ability to reason across the JORC Code (including all respective items in Table 1), who can provide reasoned analysis of the risks in a project, and who is able to communicate the material risks (without exclusion) to their peers, management, the board of directors and investors.

Criteria:

- Mature ability to REASON across ALL RESPECTIVE ITEMS
- Can provide REASONED ANALYSIS of RISKS
- Able to COMMUNICATE MATERIAL RISKS
  - peers, management, board of directors, investors

SAGEABILITY

Reasoning Levels

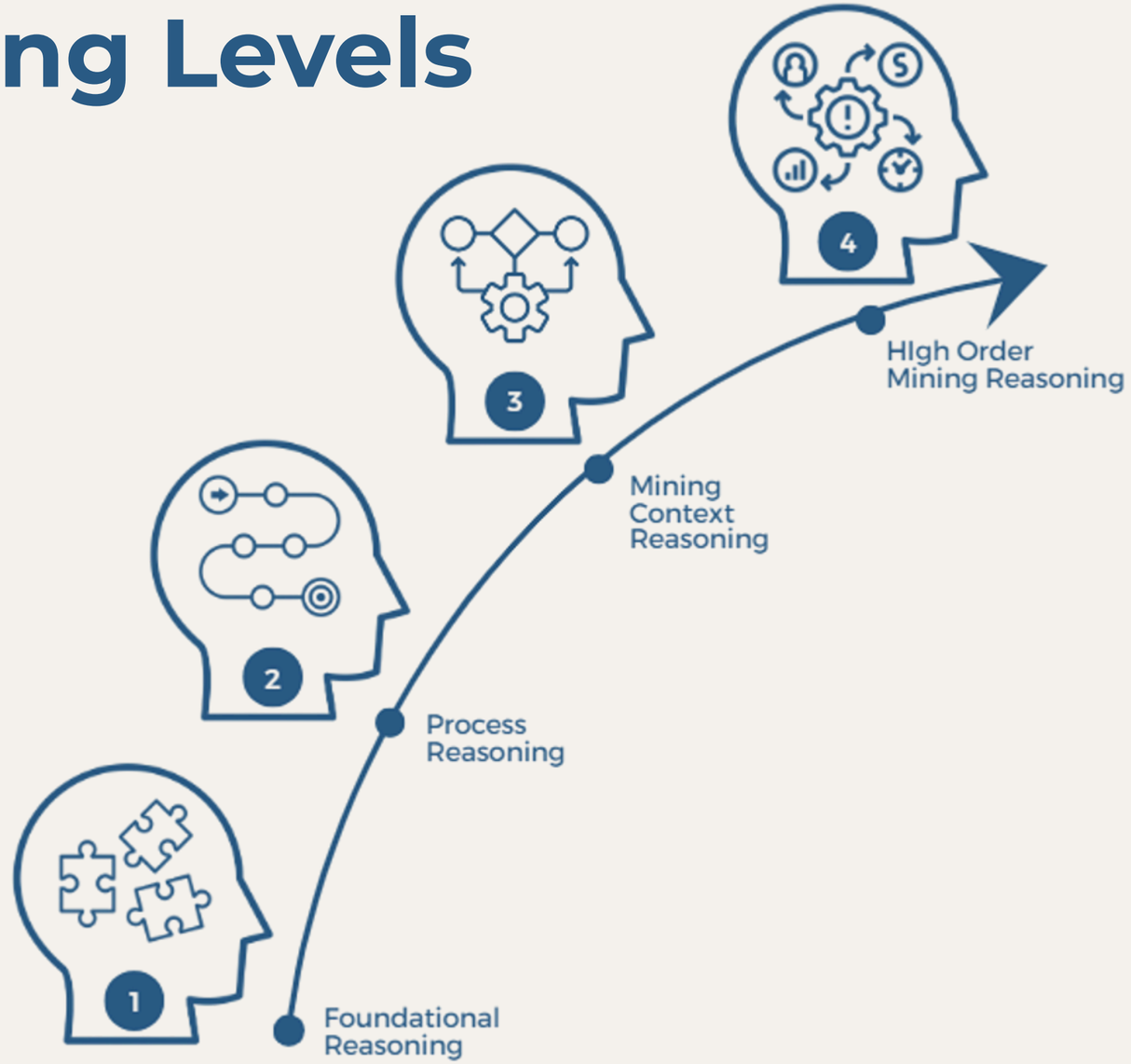
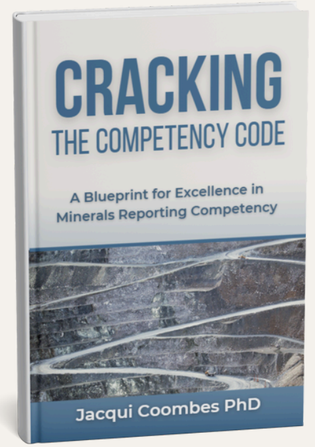


Figure 25: ERMROR Reasoning Levels (after Coombes(2013))

*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves



Stakeholder Expectations

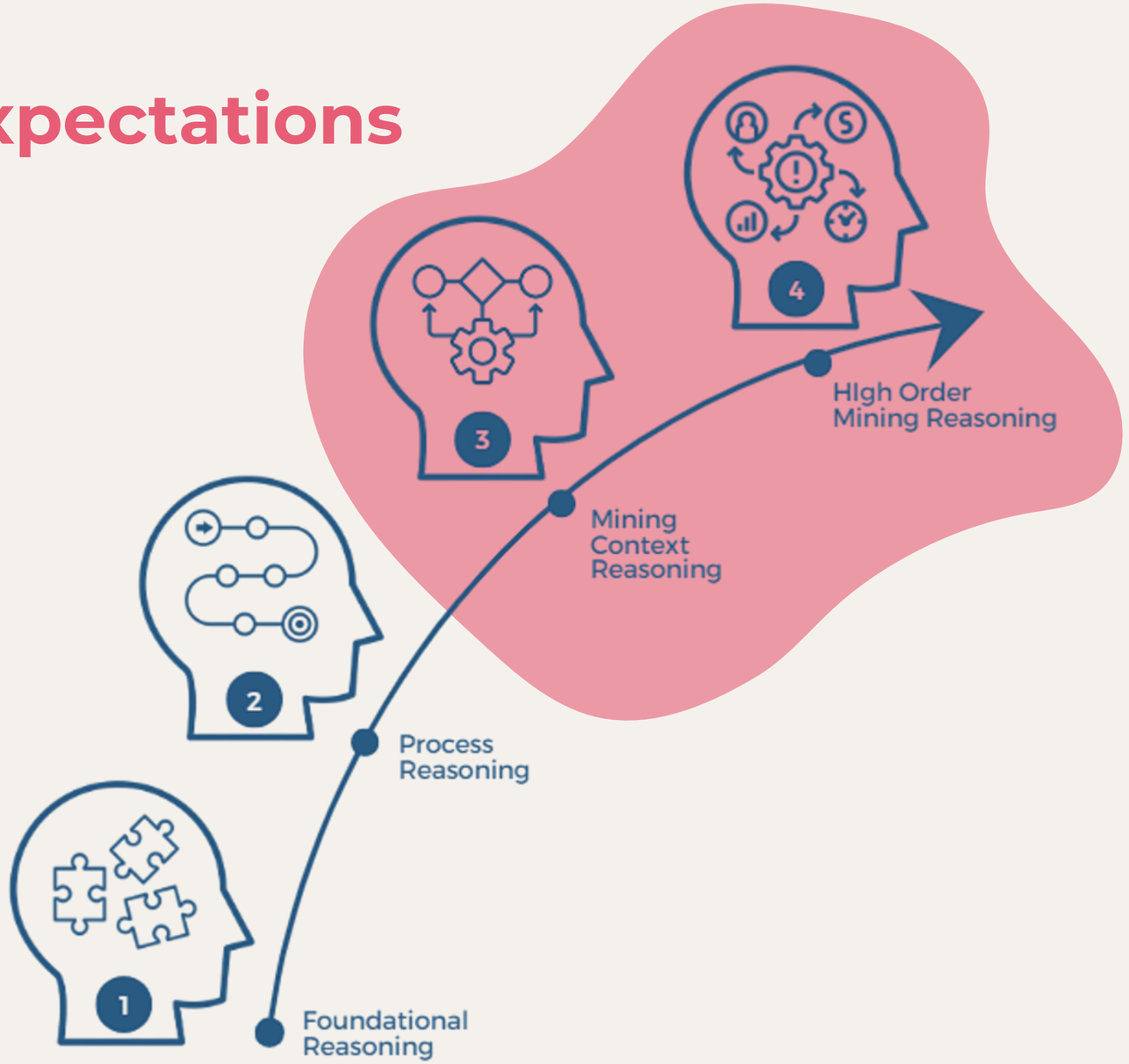
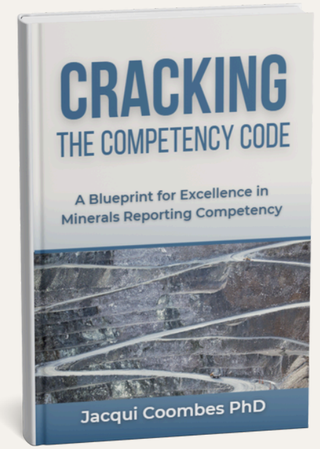


Figure 25: ERMROR Reasoning Levels (after Coombes(2013))

*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves



Stakeholder Expectations

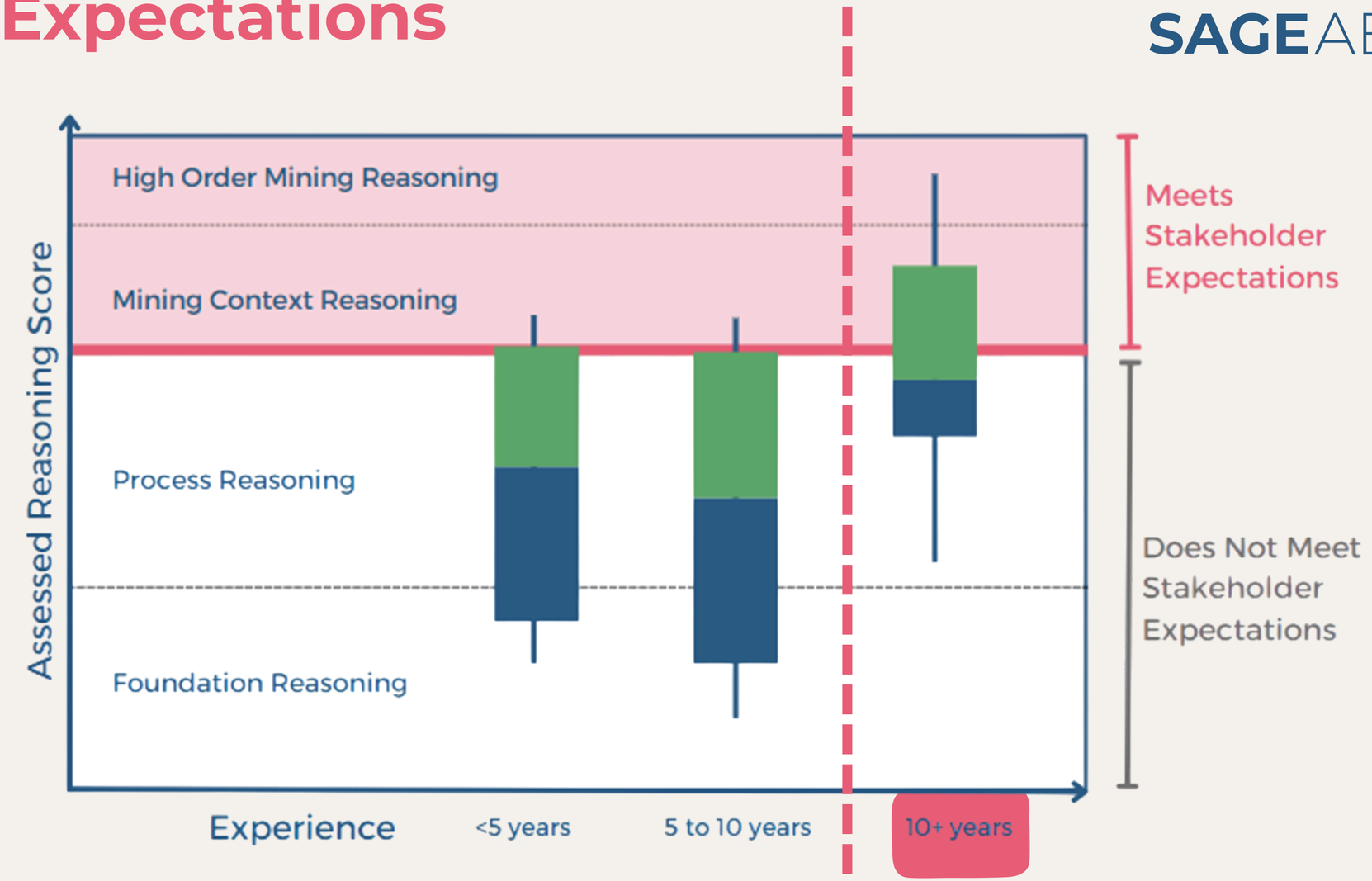


Figure 42: ERMROR Reasoning by Experience (After (Coombes, 2013))

*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves

Stakeholder Expectations

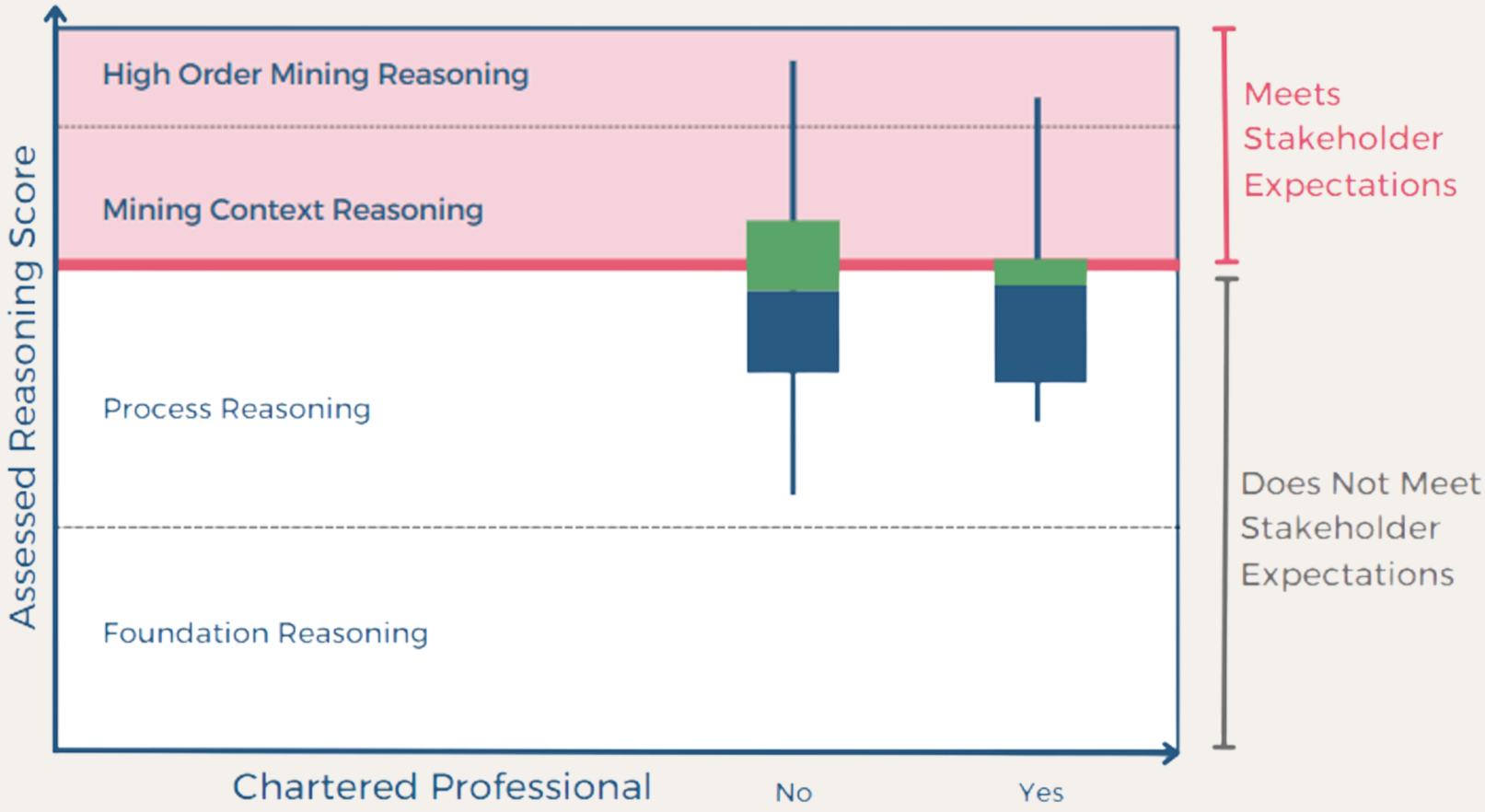


Figure 43: ERMROR Reasoning by CP Status (After (Coombes, 2013))

*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves

How do we develop a CQP Talent Pipeline?

*CQP = Competent /Qualified Person

SAGEABILITY

How do we develop a CQP Talent Pipeline?

*CQP = Competent /Qualified Person

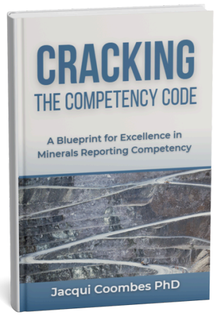
SAGEABILITY

CQP* Competency Framework

*CQP = Competent /Qualified Person

SAGEABILITY

CQP Competency Framework

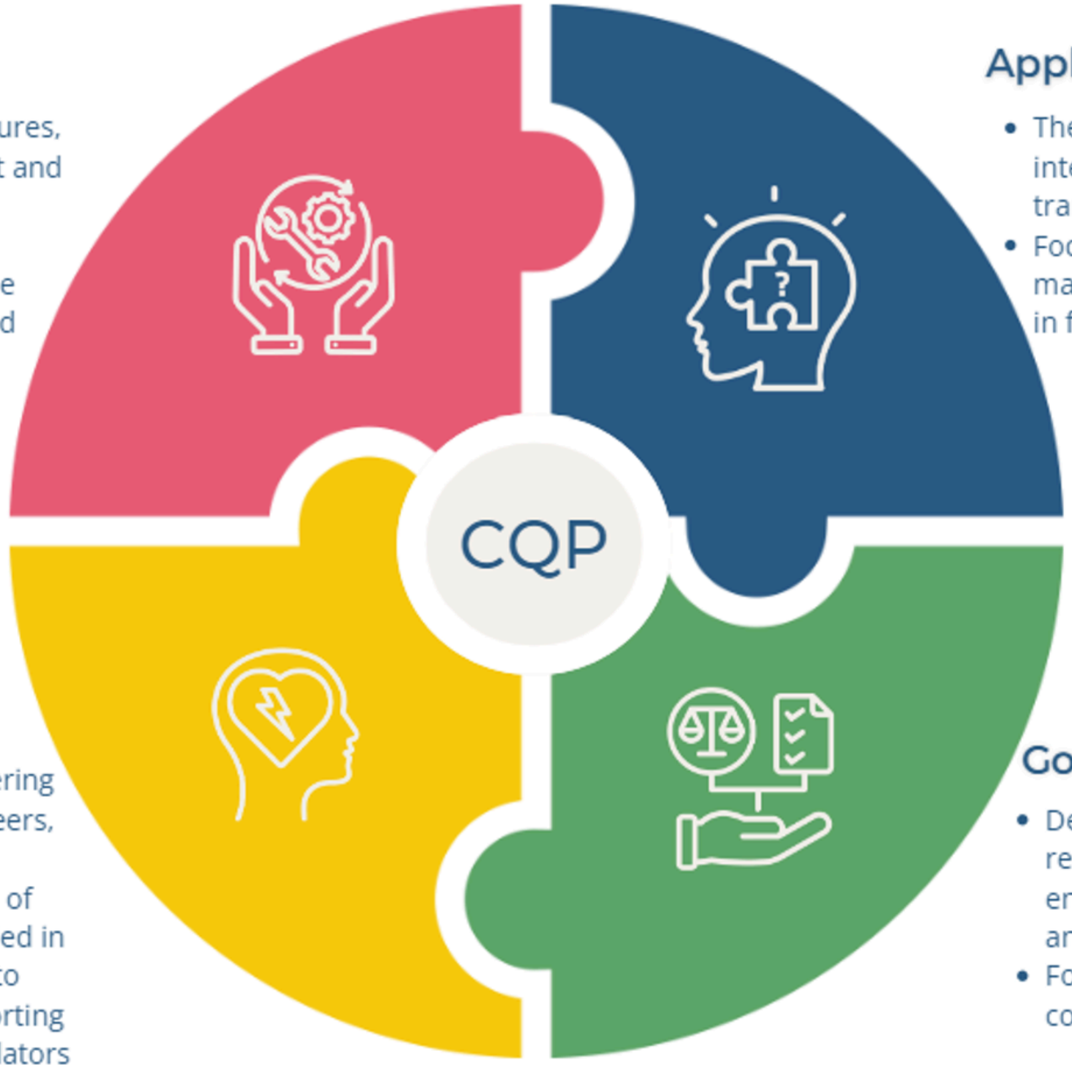


Core Technical Skills

- Mastery of essential technical procedures, tools, and effective data management and interpretation required for accurate ERMROR activities
- Focus is on technical expertise and the effective use of data to make informed technical decisions and products

Applied Reasoning

- The ability to apply critical thinking and interpret data for making sound, transparent decisions in complex scenarios
- Focus is on advanced reasoning, risk management, and application of judgment in face of uncertainty and incomplete data



Stakeholder Leadership

- Clear and ethical communication, fostering leadership and collaboration among peers, investors, and regulators.
- Focus is on competent communication of complex ideas to stakeholders, grounded in ethical behaviour and leadership, and to maintaining the integrity of public reporting to foster trust from investors and regulators

Governance & Compliance

- Deep understanding and adherence to reporting standards (JORC, NI 43-101, etc.), ensuring regulatory compliance, accuracy, and transparency in reporting.
- Focus is on regulatory awareness and legal compliance in reporting.

Figure 26: CQP Competency Framework

*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves

SAGEABILITY

USA Dep Labor: O*Net

O*NET OnLine

Occupation keyword search: electrician Go

Help | Find Occupations | Advanced Searches | O*NET Data | Crosswalks | Share | Sites

Mining and Geological Engineers, Including Mining Safety Engineers

17-2151.00

Updated 2025

Conduct subsurface surveys to identify the characteristics of potential land or mining development sites. May specify the ground support systems, processes, and equipment for safe, economical, and environmentally sound extraction or underground construction activities. May inspect areas for unsafe geological conditions, equipment, and working conditions. May design, implement, and coordinate mine safety programs.

Sample of reported job titles: Mine Engineer, Mining Consultant, Mining Engineer, Planning Engineer, Project Engineer, Safety Engineer, Safety Representative

Occupation-Specific Information
- Tasks
- Technology Skills
- Tools Used

Occupational Requirements
- Work Activities
- Detailed Work Activities
- Work Activities Outline
- Work Context

Experience Requirements
- Job Zone
- Training & Credentials
- Apprenticeship Opportunities

Worker Requirements
- Skills
- Knowledge
- Education

Worker Characteristics
- Abilities
- Interests
- Work Values
- Work Styles

Workforce Characteristics
- Wages & Employment Trends
- Job Openings on the Web

More Information
- Related Occupations
- Crosswalk
- Professional Associations

Research Theories and Applications

ECU EDITH COWAN UNIVERSITY

Research Online
Institutional Repository

My Account | FAQ | About | Contact Us | Home

Make a Submission

My Account

SEARCH

Enter search terms: Search

in this series

Advanced Search
Help Using Search

Follow

LINKS

Benefits of Submitting to RO

BROWSE

Collections
Disciplines
Author Names
Exhibits

AUTHOR INFORMATION

Author Guidelines
Submit Research
Contact Us
Thesis Submission Guidelines

Home > Theses collections > Doctorates and Masters > 610

THESES: DOCTORATES AND MASTERS

Practice based competency development: a study of resource geologists and the JORC code system

Download

Jacqueline Coombes, *Edith Cowan University* Follow

Date of Award
2013

Document Type
Thesis

Publisher
Edith Cowan University

Degree Name
Doctor of Philosophy

School
School of Management

Faculty
Faculty of Business and Law

First Supervisor
Dr Llandis Barratt-Pugh

Second Supervisor
Dr Peter Lilly

Abstract

1,356 DOWNLOADS
Since October 13, 2013

PLUMX METRICS

INCLUDED IN

Human Resources Management Commons

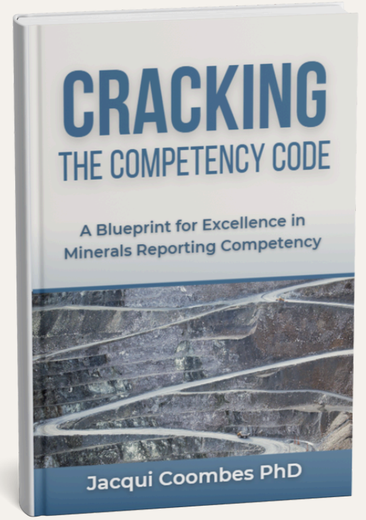
SHARE

SAGEABILITY

→ Mapping

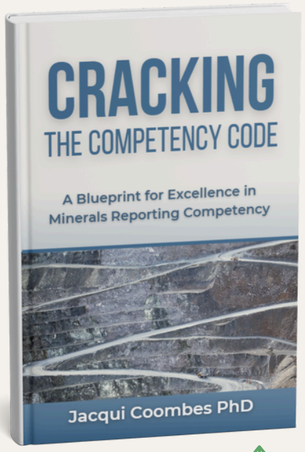
*Table 4: Matrix of O*NET Components and CQP Competency Pillars*

Description of connections		CQP Competency Pillars			
		Core Technical Skills	**Applied Reasoning**	**Governance & Compliance**	**Stakeholder Leadership**
O*NET Component	**Knowledge**	Deep technical understanding of geology, mining, and resource estimation methods.	Knowledge of data interpretation, risk management, and problem-solving techniques.	Understanding of reporting codes, regulatory frameworks, and ethical principles.	Awareness of stakeholder expectations and effective communication strategies.
	Skills	Actionable proficiencies, such as geological modelling, geostatistics, and data validation.	Skills in critical thinking, judgment, and scenario evaluation under uncertainty.	Competence in report preparation, regulatory compliance, and QA/QC processes.	Proficiency in presenting findings, managing relationships, and leading teams.
	Abilities	Capacity to apply technical expertise in real-world tasks.	Analytical and deductive reasoning to balance technical, operational, and economic challenges.	Ethical decision-making, transparency, and independence in reporting.	Strategic insight, adaptability, and leadership in multidisciplinary contexts.
	Work Activities	Tasks like data collection, geological modelling, resource classification. Mining optimisation	Activities such as integrating data to make resource classification decisions.	Day-to-day adherence to regulatory standards, documentation, and auditability.	Stakeholder engagement, addressing concerns, and aligning technical outputs with business goals.



CQP Competency Framework

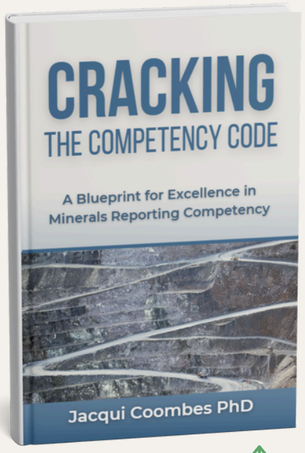
- Exploration Geologist



SAGEABILITY

CQP Competency Framework

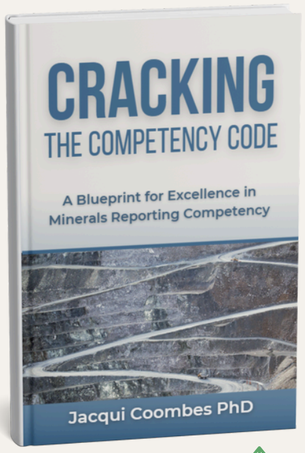
- Resource Geologist



SAGEABILITY

CQP Competency Framework

- Mining Engineer



SAGEABILITY

Reasoning Levels

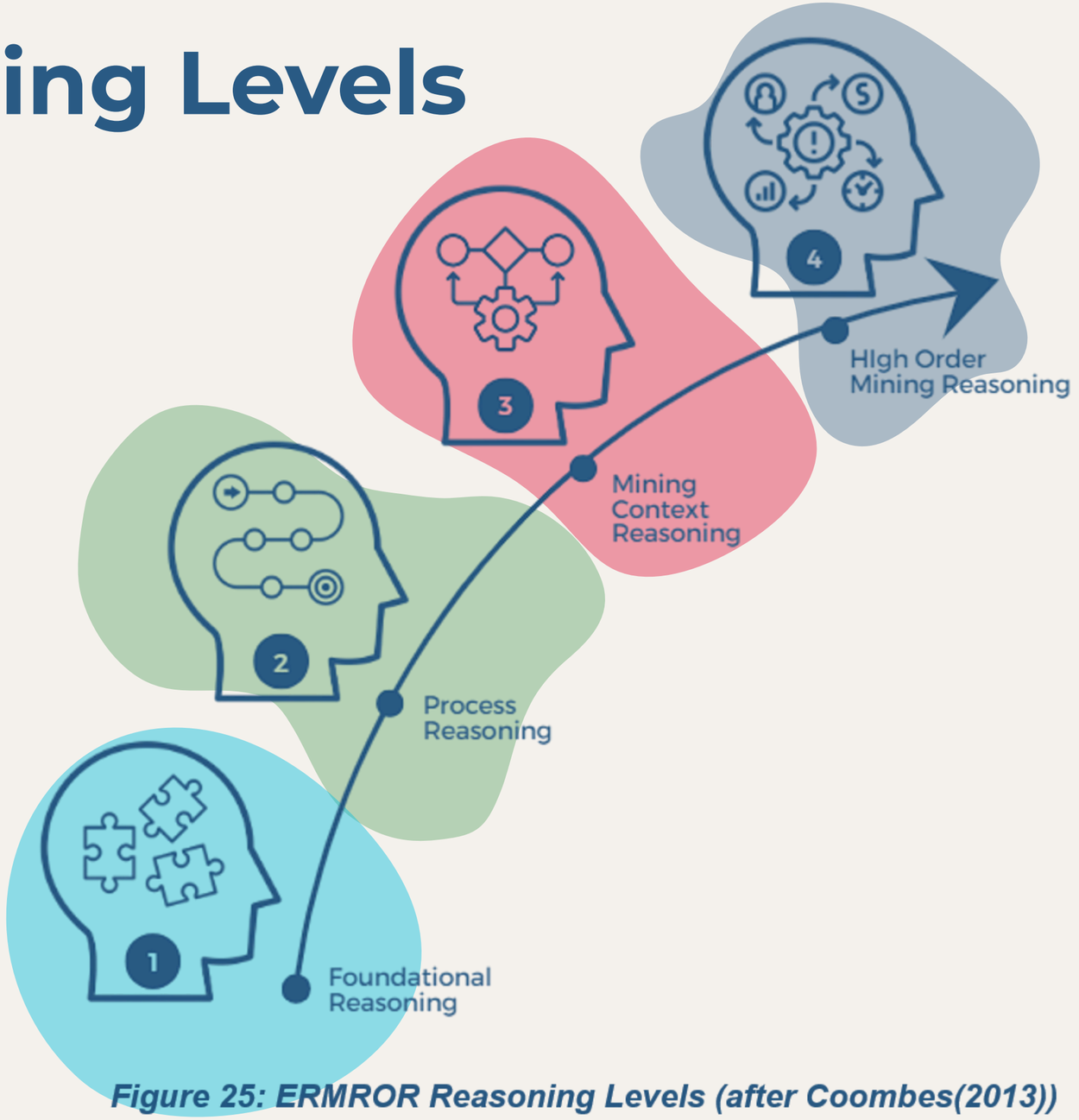
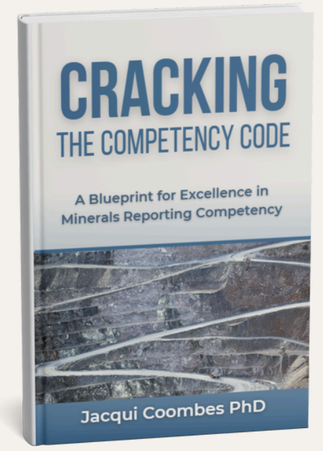


Figure 25: ERMROR Reasoning Levels (after Coombes(2013))



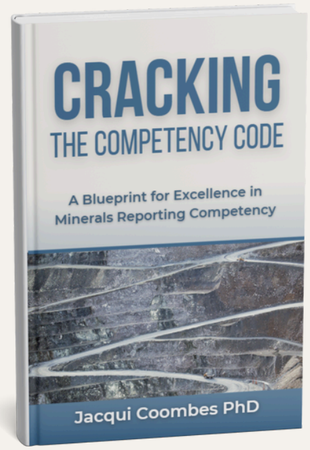
*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves

Competency Rubrics

SAGEABILITY

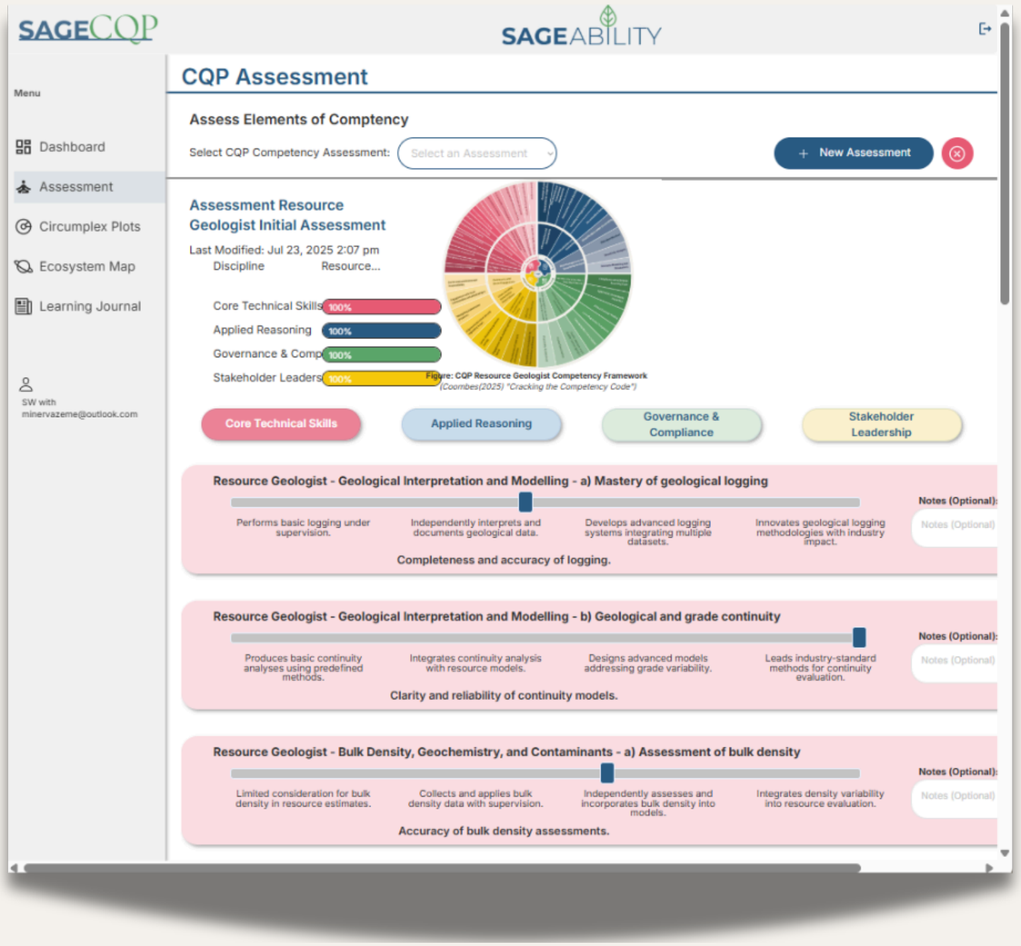
Table 6: Rubric for Assessing CQP Competency of Exploration Geologists

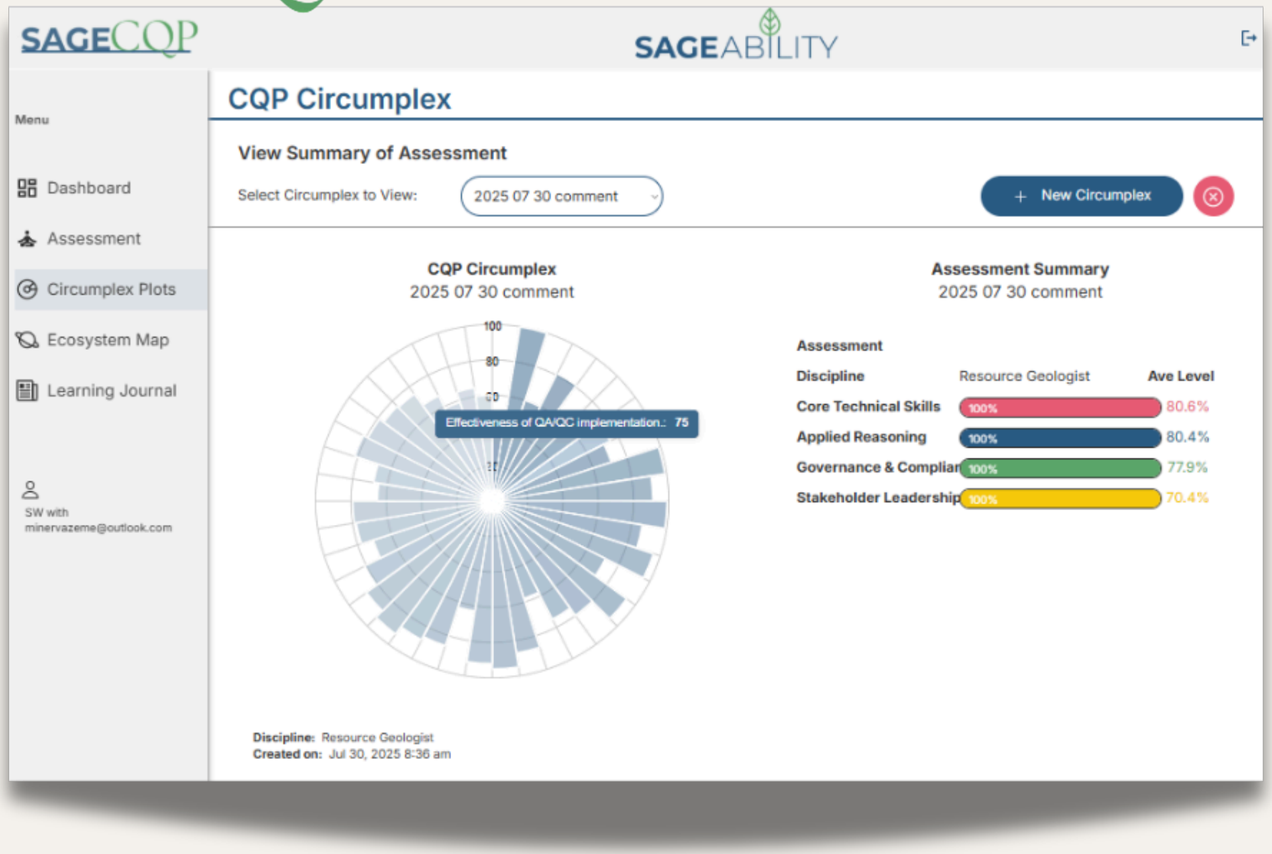
Core Technical Skills – Exploration Geologist							
Category	**Subcategory**	**Description**	**Assessment Criteria**	**Foundation Reasoning**	**Process Reasoning**	**Mining Context Reasoning**	**High Order Reasoning**
1. Mastery of Geological and Geophysical Techniques	a) Geological Mapping	Proficient in detailed surface geological mapping and subsurface extrapolation using drilling data and geophysical surveys.	Application of geological mapping techniques to exploration objectives.	Executes basic mapping tasks under supervision.	Develops initial interpretations of mapped geological structures.	Integrates mapping data into conceptual geological models and adopts models accordingly.	Leads comprehensive mapping projects with strategic outcomes.
	b) Remote Sensing and Geophysical Surveys	Expertise in acquiring, processing, and interpreting geophysical survey data (e.g. magnetic, radiometric, gravity, seismic).	Quality and relevance of geophysical data interpretations.	Follows set protocols for data collection and processing.	Interprets geophysical data to suggest initial exploration targets.	Integrates multi-geophysical datasets into target generation with evolving understanding.	Provides strategic insights using integrated remote sensing data.
	c) Drilling Techniques	Mastery in core and percussion drilling methods, including collar surveying, downhole surveying, and core handling.	Drilling and sampling integrity and QA/QC compliance.	Monitors drilling and sampling processes under supervision.	Oversees QA/QC and sampling protocols for accuracy.	Designs and adjusts drilling programs based on real-time data.	Leads drilling campaigns and evaluates their strategic value.
	d) Hypothesis Development and Testing	Ability to create and refine geological models hypothesising mineralisation controls, incorporating subsurface data.	Creativity and adaptability in hypothesis development.	Contributes to simple geological hypotheses under guidance.	Develops hypotheses based on initial geological and geophysical data.	Validates hypotheses with integrated datasets.	Develops innovative models for mineralisation targeting.
2. Exploration Targeting	a) Exploration Target Generation	Identifying and refining targets based on geological and geophysical data.	Generation of actionable exploration targets.	Identifies basic targets using single-dataset analysis.	Evaluates multiple datasets to refine exploration targets.	Integrates 4D mineralisation models into target generation.	Leads strategic planning for exploration targeting.
	b) Data Integration	Combining and interpreting datasets to develop mineralisation controls.	Depth and effectiveness of data integration.	Combines surface geology and geophysical data with guidance.	Integrates multiple data sources to develop a cohesive model.	Utilises advanced integration techniques for high-confidence targeting.	Synthesises cross-disciplinary datasets for strategic decisions.
	c) Target Ranking and Prioritisation	Using data-driven methods to rank exploration targets.	Robustness of ranking methodology and prioritisation.	Prioritises targets using basic ranking frameworks.	Conducts comprehensive analyses for target prioritisation.	Aligns prioritisation with broader exploration strategies.	Strategically ranks targets based on organisational goals.
3. Sampling Techniques	a) Sampling Integrity	Planning and executing representative sampling programs.	Representativeness and quality of sampling programs.	Collects samples with rudimentary understanding of process.	Oversees QA/QC for field sampling adhering to industry best practices.	Evaluates and leads comprehensive sampling programs.	Leads strategic sampling campaigns to support resource evaluation.
	b) Sample Preparation and QA/QC	Ensures proper cutting, labelling, and analysis of samples with QA/QC measures.	Effectiveness of QA/QC procedures.	Executes basic QA/QC measures under supervision.	Monitors and adapts QA/QC protocols to ensure reliability.	Designs QA/QC frameworks addressing project-specific challenges.	Leads QA/QC initiatives aligning with project goals.



*ERMROR = Exploration Results, Mineral Resources, and Ore//Mineral Reserves

SAGECQP





CQP ExcellenceProgram
Powered by SAGEABILITY

Document and discuss competency components,
including evidence of practice, gap analyses
Establish priorities to support claims of Competency

SAGEABILITY

How do we develop a CQP Talent Pipeline?

“Competency”

Clarity in Expectations and Consistency in Assessment
Establish Pathways for Individuals

*CQP = Competent /Qualified Person

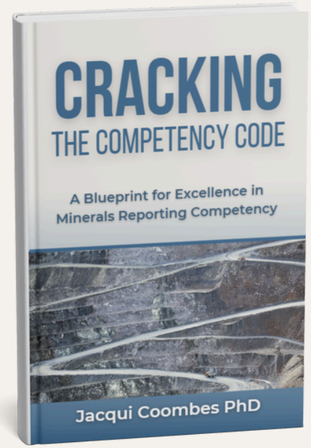
SAGEABILITY

CQP Development

*CQP = Competent /Qualified Person

SAGEABILITY

CQP Competency Ecosystem



*CQP = Competent /Qualified Person

SAGEABILITY

Community of Practice

*CQP = Competent /Qualified Person

SAGEABILITY

Minerals Reporting Australia

Public Disclosure with Integrity

Minerals Reporting Australia

Public Disclosure with Integrity

Apply for Membership

Advocacy & Standards

Representing the voice of reporting professionals to regulators, investors, boards, and the broader industry, helping to shape the future of public reporting.

Supporting Competency

Providing guidance, tools, and a trusted peer network to help Competent Persons grow, reflect, and navigate the complexities of minerals reporting with confidence.

Peer Engagement

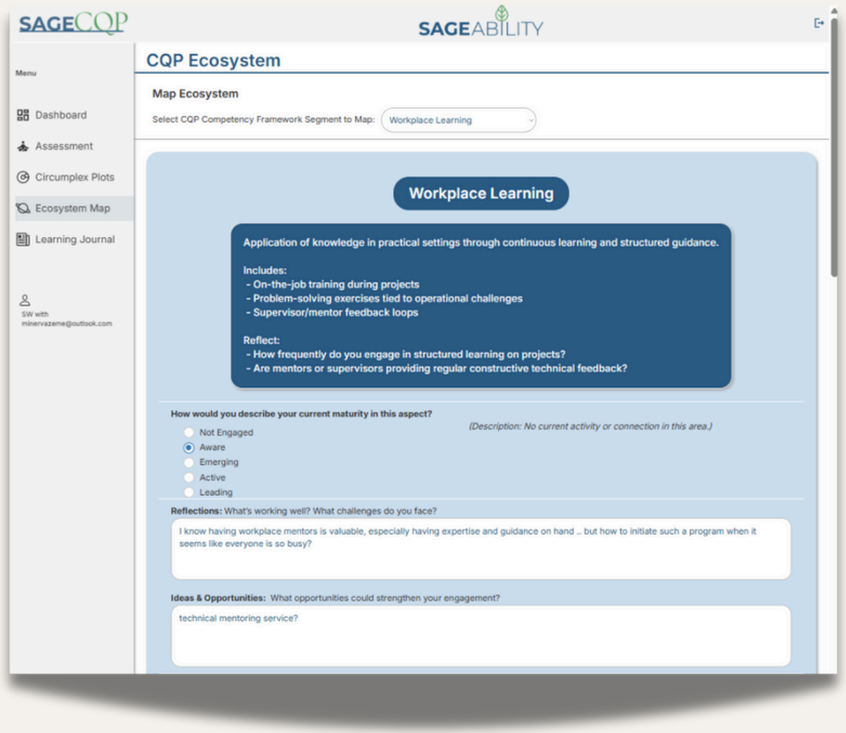
A high-trust, confidential space where reporting professionals collaborate, review, and raise the bar together, grounded in accountability and shared purpose.

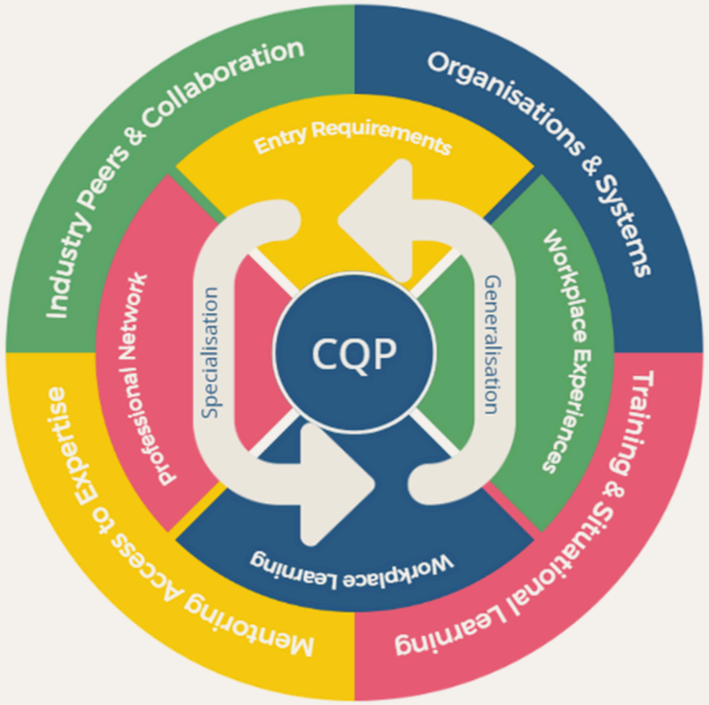
About the Minerals Reporting Australia LTD

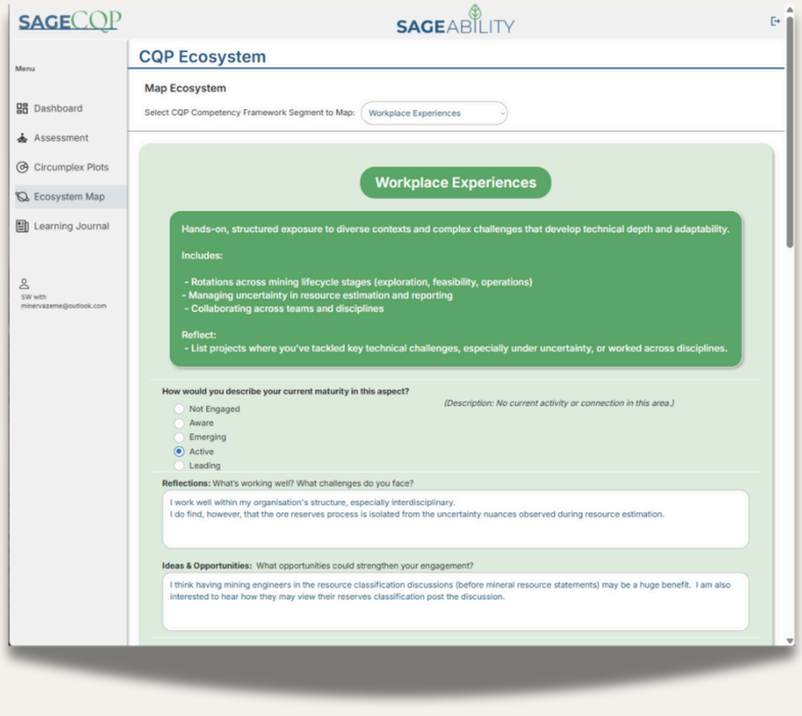
The Minerals Reporting Australia LTD (MRA) is an independent, member-led organisation dedicated to improving the quality, integrity, and transparency of minerals reporting.

Through structured peer review, professional support, and proactive advocacy, we're creating a community that upholds public disclosure standards that investors, regulators, and society can trust.

SAGECQP







A deliberate and supportive action plan to create the right ecosystem for CQP Competency Development

CQP ExcellenceProgram
Powered by SAGEABILITY

SAGEABILITY

How do we develop a CQP Talent Pipeline?

1. DEFINE COMPETENCY BY STAKEHOLDER NEEDS

Competency must align with expectations from investors, regulators, boards, and the market.

2. MAP WHAT "GOOD" LOOKS LIKE

Break it down into observable skills: technical capability, legal/regulatory context, reasoning, and communication.

3. BUILD STRUCTURED PATHWAYS

Move beyond experience-based nomination.
Provide guided development, feedback, and assessment frameworks.

4. CREATE A SUPPORTIVE ECOSYSTEM

No one becomes competent alone.
Competency develops through exposure:

- Placement in teams, organisations, and communities
- Access to experienced professionals
- Engagement in a broad range of reporting activities
- Ecosystem to embed this exposure in professional life.

Communities of Practice (e.g. **Minerals Reporting Australia**) are essential to embed peer learning, shared standards, and accountability.

*CQP = Competent /Qualified Person

SAGEABILITY

Thank you

SAGEABILITY