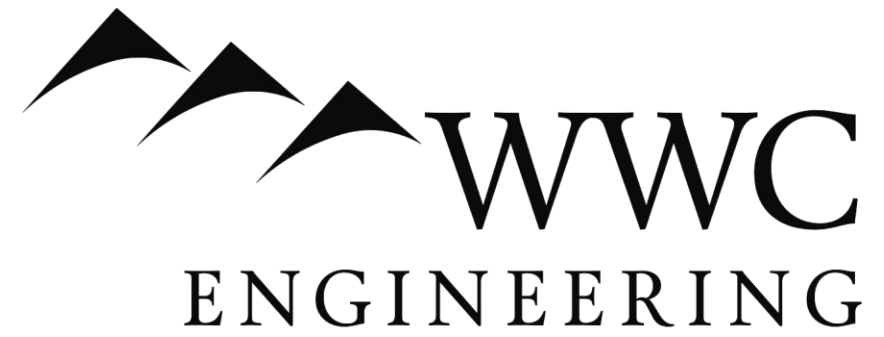
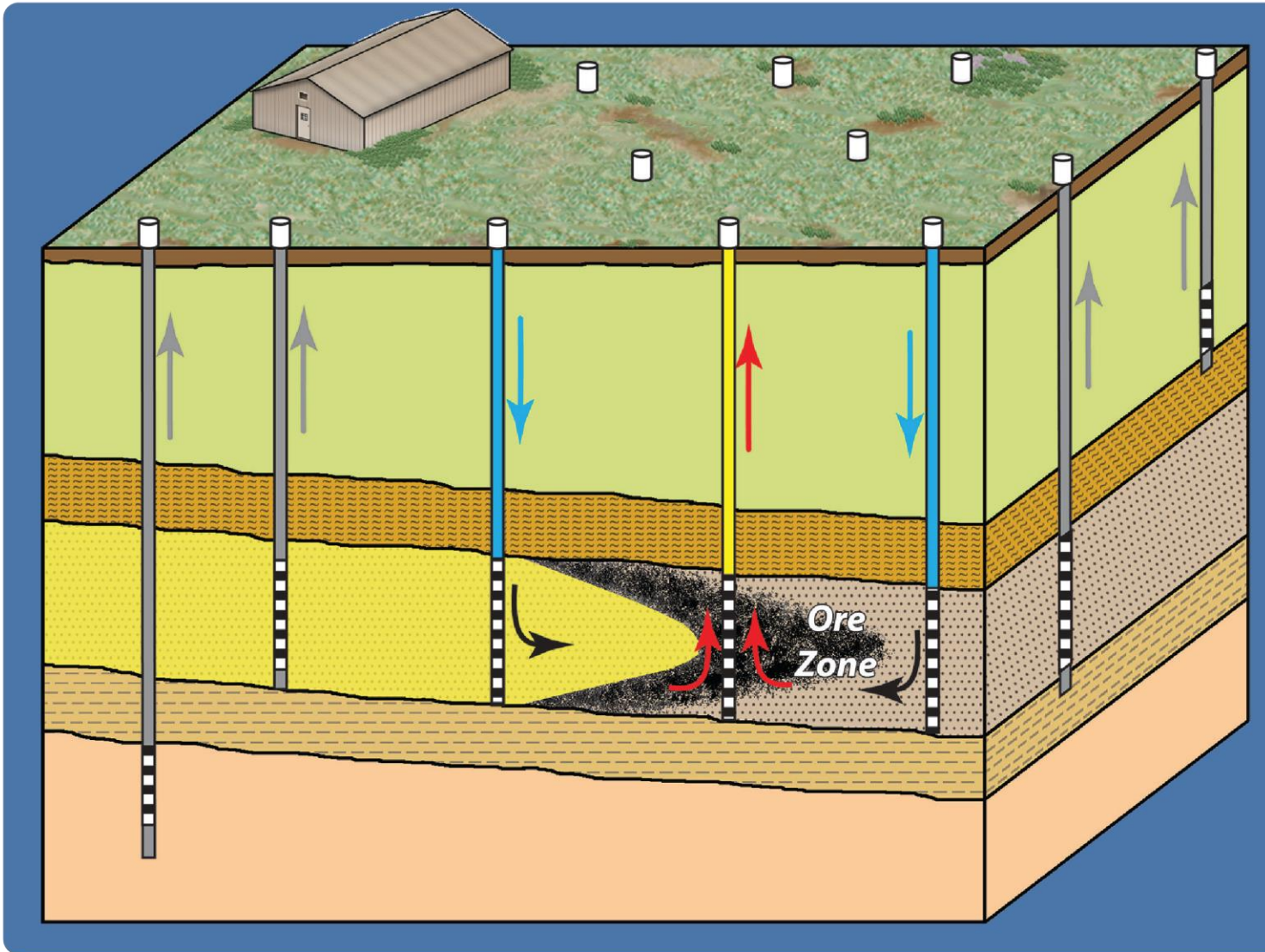


## Well "Header" House



Regulatory Programs For *In-Situ* Uranium Resource  
Reporting: A Square Peg in a Round Hole

➤ [wwcengineering.com](http://wwcengineering.com)

# NMA URW 2023

## Important Notice and Disclaimer

- I am not a lawyer
- I have no legal training or qualifications
- This presentation is based on our experience working under these regulations and is not and should not be construed as legal advice
- While I am not a lawyer, I am confident in stating that it is not in your best interest to seek legal advice from a geologist



WWC Engineering (WWC) is an independent, employee-owned, multi-disciplinary, professional firm specializing in Civil/Site, Environmental, Land Development, Mining, Municipal, NEPA, Oil & Gas, Planning, Roads/Bridges, Surveying, Water/Wastewater and Water Resources services. WWC has approximately 120 employees and has been serving the Rocky Mountain region since 1980. Our client focus is to provide innovation, quality and value to every project.

## Introduction and Overview of Presentation

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- 1) Why do publicly traded companies report?
- 2) Regulatory Programs
- 3) Global Standards for Reporting
- 4) When to Issue a Report
- 5) Primary Purposes
- 6) Types of Reports
- 7) General Report Format and Content
- 8) Reporting of ISR Uranium Resources
- 9) Implications for Companies/Projects
- 10) Lessons Learned
- 11) Summary and Conclusions
- 12) Questions





# Why Do We Report?

Mineral reporting regulations help protect investors

## Bre-X history

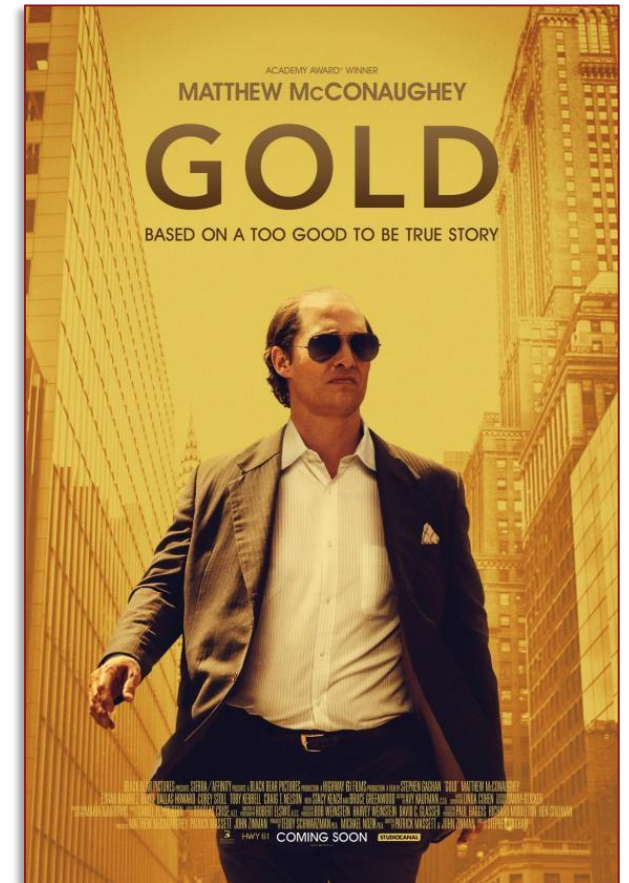
- Canadian company exploring for gold in Indonesia
  - Claimed to have 70 million ounces of gold in their Indonesia project
  - Stock price grew from <\$1 CAD to almost \$290 CAD per share with a \$6 billion CAD market cap
  - Freeport-McMoran due diligence found only insignificant amounts of gold
  - Bre-X had been “salting” samples with gold from other sources including dust from jewelry
  - Bre-X collapse wiped out billions of investor money

## Aftermath

- The project geologist fell out of a helicopter above the jungle in Indonesia
- Company president was attacked in his mansion in the Bahamas
- Canadian authorities strengthened securities regulations by implementing National Instrument 43-101 Standards for Disclosure for Mineral Projects.
- At least the investors got to watch a Matthew McConaughey movie

## Poseidon Bubble in Australia

- Announcement of a high-grade nickel discovery which lead to a bubble in nickel and mining companies
- Once in production, the grade was revised down by ~60%
- Precipitated JORC development



# Regulatory Programs

Publicly listed companies on Australian, Canadian, U.S., and other stock exchanges are regulated



Canadian Securities  
Administrators

Autorités canadiennes  
en valeurs mobilières



# PERC



- Australasian Joint Ore Reserves Committee (JORC) was established in 1971 and published the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) in 1989
- Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) came into effect in 2001. Approximately 40% of public mining companies are listed on the TSX and TSX Venture exchanges (TSX, 2023).
- U.S. SEC adopted amendments to modernize the property disclosure requirements for mining registrants in Regulation S-K Subpart 1300 (S-K 1300) in 2018.
- Others include Pan-European Code for Reporting Exploration Results, Mineral Resources and Reserves (PERC Code) and South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC Code).

## Global Standards for Reporting

Common reporting standards are important to compare apples to apples



- Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Mineral Resource and Mineral Reserve Committee (MRMR) develops and defines the standards, best practices, and guidelines intended to foster greater standardization of reporting within the public domain, specifically under NI 43-101.
- Society for Mining, Metallurgy & Exploration (SME) Resources and Reserves Committee publishes the SME Guide for Reporting Exploration Information, Mineral Resource, and Mineral Reserves (SME Guide).
- Committee for Mineral Reserves International Reporting Standards (CRIRSCO) is a group of member organizations that are responsible for developing mineral reporting codes and guidelines in Australasia (JORC), Brazil, Canada (CIM), Chile, Colombia, Europe (PERC), India, Indonesia, Kazakhstan, Mongolia, Russia, South Africa (SAMREC), Turkey, and the USA (SME).
  - Note that the USA is represented by SME and not the SEC
- S-K 1300 uses CRIRSCO classification terminology but has its own definitions.

# When to Issue a Report

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Guidance and regulations have requirements for when reports are required

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## JORC Code

- Reports are prepared to inform investors if there is a statement on exploration targets, exploration results, mineral resource, or ore reserves.

## National Instrument 43-101

- When a preliminary prospectus, a rights offering or an annual information form, or if new material information about a project is obtained

## SEC Rule S-K 1300

- Companies are required to provide a detailed Technical Report Summary on all properties that are material to their business

Material - The term material, when used to qualify a requirement for the furnishing of information as to any subject, limits the information required to those matters to which there is a substantial likelihood that a reasonable investor would attach importance in determining whether to purchase the security registered.

# Primary Purpose

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Reduce asymmetric information between mining companies and investors

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## JORC Code—*Transparency, Materiality and Competence*

- *Transparency*—Reports have sufficient information, that is clear and unambiguous, not misleading and that no material information is omitted. 'If not, why not' basis for providing information.
- *Materiality*—Reports contain all relevant information for the purpose of investors making a reasoned and balanced judgement regarding the results of the exploration, resources or reserves.
- *Competence*—Reports must be based on work done by a suitably qualified and experienced person subject to enforceable professional code of ethics.

## National Instrument 43-101

- *Disclosure*--Reports must provide a summary of material scientific and technical information concerning mineral exploration, development and production activities on a material mineral property.

## SEC Rule S-K 1300

- Previous guidance (Industry Guide 7) had numerous issues. SEC undertook development of the S-K 1300 rules in order to provide a more comprehensive understanding of a registrant's mining properties to help them make more informed investment decisions.



# Types of Reports

Reports are to inform investors of the results of a study completed on a project and the type of study determines the level of reporting.

## JORC Code

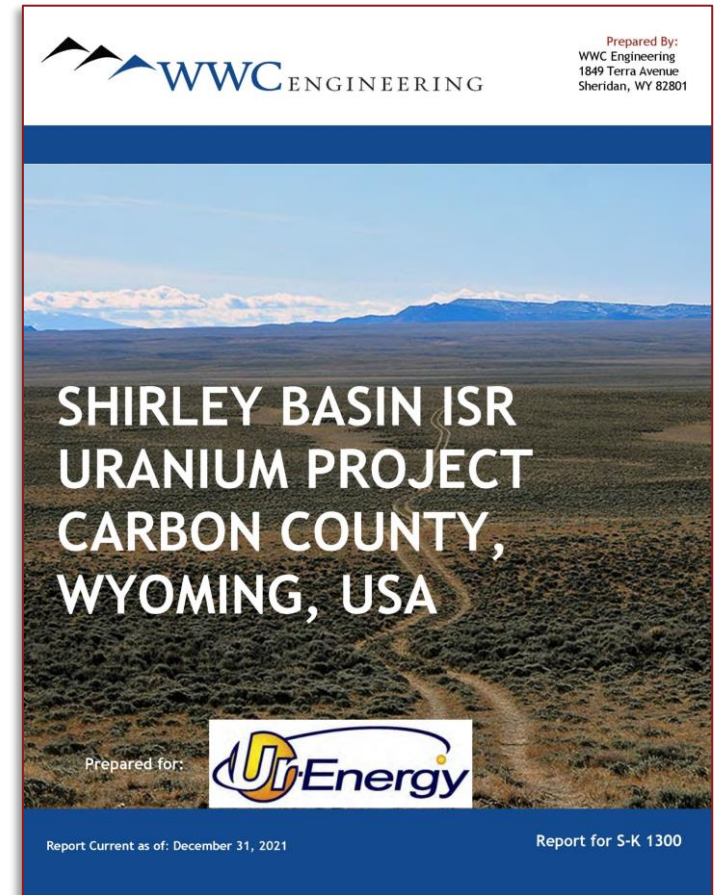
- Scoping Study
- Preliminary Feasibility Study
- Feasibility Study

## National Instrument 43-101

- Technical Reports
- Preliminary Economic Assessment
- Pre-feasibility Study
- Feasibility Study

## SEC Rule S-K 1300 (All as Technical Report Summary)

- Initial Assessment
- Preliminary Feasibility Study
- Feasibility Study



# General Report Formats and Content

Regulations accommodate different types of reporting but, while not identical, are generally similar in content and structure

## JORC Code

- Property location and description
- Accessibility...
- History
- Geological setting
- Deposit type
- Exploration
- Drilling
- Sample prep
- Data verification
- Metallurgical testing
- Mineral resource estimate
- Adjacent properties
- Other relevant data
- Interpretation and conclusions
- Recommendations
- References

## National Instrument 43-101

- Summary & introduction
- Reliance on other experts
- Property description and location
- Accessibility...
- History
- Geological setting and mineralization
- Deposit type
- Exploration and drilling
- Sample prep
- Data verification
- Mineral processing and met testing
- Mineral resource estimates
- Mineral reserve estimates
- Mining and recovery methods
- Infrastructure, market studies, environmental, capital and operational costs, economic analysis, etc.

## SEC Rule S-K 1300 (All as Technical Report Summary)

- Summary & introduction
- Property description
- Accessibility...
- History
- Geological setting, mineralization, and deposit
- Exploration
- Sample prep
- Data verification
- Mineral processing and met testing
- Mineral resource estimate
- Mineral reserve estimate
- Mining and processing methods
- Environmental studies...
- Market studies, costs, and economic analysis
- Adjacent properties
- Other relevant data
- Conclusions and recommendations

# Reporting of ISR Uranium Resources

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Like all publicly listed mining companies, uranium explorers and miners must also report material changes to their projects

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## JORC Code

- ASX listed companies are not required to publicly provide full reports, generally provide lengthy public announcements
- JORC Code does not mention nor really consider in-situ mining (1 reference to solution mining which is not the same)
- Example issues: requires ore tonnage, does not consider use of PFN logging or geophysical logging in general to determine deposit grades or thickness, U market problematic

## National Instrument 43-101

- TSX listed companies must provide full reports that typically coincide with a public announcement
- CIM does provide uranium specific guidance BUT guidance doesn't trump requirements that assume underground or open pit extraction, the opaque uranium market, converting resources to reserves, and ISR mine planning

## SEC Rule S-K 1300 (All as Technical Report Summary)

- Companies listed in American exchanges must also provide reports, typically as exhibits in annual 10-K filings or initial filings
- One occurrence of term 'in-situ' in regulations, however it relates to the location of the resources not the in-situ recovery (ISR) mining method.
- Example issues: requires reporting of ore tonnage, does not consider GT to demonstrate deposit quality, only contemplates mining via surface or underground methods, doesn't allow disclosure of lbs in exploration target/potential estimates, requires reserves for PFS or FS, geophysical logs not discussed in regs, opaque uranium market, liability falls on qualified person (QP) though allows company to be QP, no disclaimers allowed for QP, and ISR mine planning assumptions are not well understood

# Implications for Companies/Projects

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These reports directly impact share price and a company's ability to raise capital

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## All Regulatory Programs

- Personal liability of QP, more acute under S-K regs
  - S-K regulations allow a third-party firm to act as QP
- Lengthy and protracted comment/response cycles with regulators (exacerbated by unique nature of mineral recovery)
- Unable to use available exemptions
- Decreased share prices
- Costly penalties
- Trading halts/Cease Trade without notice
- Deregistration and delisting by stock exchanges
- Corporate officers unable to work in extractive industry (at least for a public company)
- Unable to raise capital and advance Project(s)
- Other regulatory bodies, such as the NRC, often look at technical reports, disclosures must be consistent across multiple agencies



# Lessons Learned

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What have we learned through preparing these reports

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## All Regulatory Programs

- Disclosure is key!
- For good or bad, these are the rules
- Make sure to check the boxes and include the required report sections and information
- Not all reports get reviewed
- The SEC is required to review some level of reporting (which includes S-K 1300 reports) of each company at least once every three years
- While the rules may have been written by lawyers, reports are reviewed by mining engineers
- When in doubt, call the regulators. A quick phone call may eliminate a future comment
- Comments and responses on S-K 1300 reports are public and while not regulation or guidance, they can be useful to see what has been focused on in the past

# Summary and Conclusions

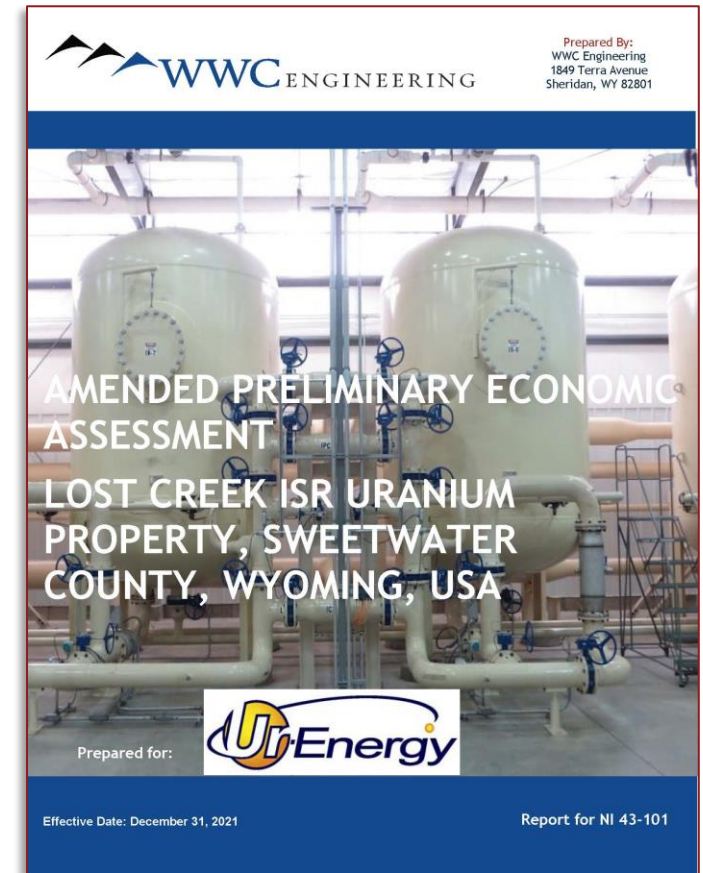
Technical Reports are critical for public companies which makes lack of acknowledgement of in-situ extraction problematic

## Summary

- Under all regulatory authorities, the main purpose of technical reports is to protect investors
- The JORC Code, NI 43-101, and S-K 1300 generally have the same contents, but there are some key differences, and the reports are not interchangeable.

## Conclusions

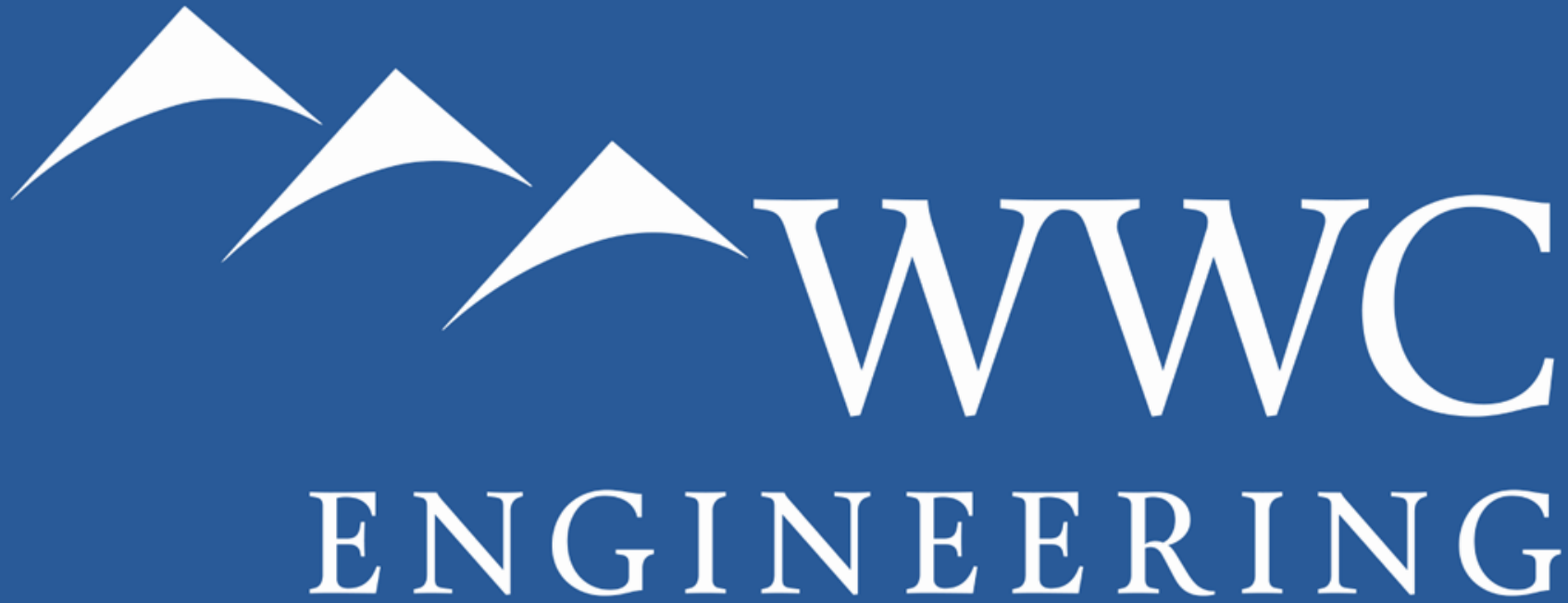
- Uranium in-situ reporting requires explanation of unique aspects (like GT)
- As a QP, be prepared to respond to inquiries from exchanges and perhaps issue amended reports
- Be prepared for disconnection between regulations and what regulators demand
- As a QP don't let your E&O insurance lapse and consider purchasing D&O insurance
- Sign as a QP Firm for S-K 1300 reports if possible
- Be prepared to have your own legal counsel
- Technical reports can be complex and costly
- Reports can also be extremely helpful both technically and for capital raising



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Questions?



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