

## PRELUDE

This guideline to Technical Studies is provided as a guide to the compilation of the various studies relating to Reserves. It is designed to be read in conjunction with Table 1 and the Code.

Scoping Studies, Pre-Feasibility Studies, Feasibility Studies (and on-going life-of-mine studies) analyse and as engineering, and economic factors with increasing detail and precision. Therefore, the same criteria may be used

Scoping Studies cannot convert Inferred Mineral Resources to Mineral Reserves

Technical studies may not include Exploration Targets or Mineralisation

SAMREC TABLE 2

General	Scoping Study	Prefeasibility Study
Resource categories	Mostly Inferred	Mostly Indicated
Reserve categories	None	Mostly Probable
Mining method and geotechnical	Conceptual	Preliminary Options
Mine design	None or high-level conceptual	Preliminary mine plan and schedule
Scheduling	Annual approximation	3-monthly to annual
Mineral Processing	Metallurgical test work	Preliminary Options
Permitting - (water, power, mining, prospecting & environmental)	Required permitting listed	Preliminary applications submitted
Social licence to operate	Initial contact with local communities	Formal communication structures and engagement models in place
Risk tolerance	High	Medium

Capital Cost Category	Scoping Study	Prefeasibility Study
Basis of Estimate to include the following areas:		
Civil/structural, architectural, piping/HVAC, electrical, instrumentation, construction labour, construction labour productivity, material volumes/amounts, material/equipment, pricing, infrastructure	Order-of-magnitude, based on historic data or factoring. Engineering < 5% complete.	Estimated from historic factors or percentages and vendor quotes based on material volumes. Engineering at 5-20% complete.
Contractors	Included in unit cost or as a percentage of total cost	Percentage of direct cost by area for contractors; historic for subcontractors
Engineering, procurement, and construction management (EPCM)	Percentage of estimated construction cost	Key parameters, Percentage of detailed construction cost
Pricing	FOB mine site, including taxes and duties	FOB mine site, including taxes and duties
Owner's costs	Factored, benchmark, database or historic estimate	Budgeted quotes on key parameters and estimates from experience, factored from similar project
Environmental compliance / Closure Cost	Factored from historic estimate	Estimate from experience, factored from similar project
Escalation	Not considered	Based on entity's current budget percentage
Accuracy Range (Order of magnitude)	±25-50%	±15-25%
Contingency Range (Allowance for items not specified in scope that will be needed)	±30%	15-30%
Operating Cost Category	Scoping Study	Prefeasibility Study
Basis	Order-of-magnitude, based on historic data or factoring.	Estimated from historic factors or percentages and vendor quotes based on material volumes.
Operating quantities	General	Specific estimates with some factoring
Unit costs	Based on historic data for factoring	Estimates for labour, power, and consumables, some factoring
Accuracy Range	±25-50%	15% - 25%
Contingency Range (Allowance for items not specified in scope that will be needed)	± 25%	± 15%

Mineral Resources and Mineral

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Feasibility Study
Measured and Indicated
Proved and Probable
Detailed and Optimized
Detailed mine plan and schedule
Monthly for much of payback period
Detailed and Optimized
Authourities engaged and applications submitted
Contracts/agreements in place with local communities and municipalities (local government)
Low

Feasibility Study
Detailed from engineering at 20% to 50% complete, estimated material take-off quantities, and multiple vendor quotations
Written quotes from contractor and subcontractors
Detailed estimate
FOB mine site, including taxes and duties
Detailed estimate
Estimate prepared from detailed zero-based budget for design engineering and specific permit requirements
Based on cost area with risk
±10-15%
10% - 15% (actual to be determined based on risk analysis)

Feasibility Study
Detailed estimate
Detailed estimates
Letter quotes from vendors; minimal factoring
10% - 15%
± 10% (actual to be determined based on risk analysis)