



# Exploration and Mining Business Reference Model

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**Discover:** The process by which an exploration target and/or a mineral resource is articulated and defined for acquisition purposes. The process includes: evaluation of grade and tonnes, pre-feasibility phase, examining the production options and acquisition of the necessary rights.

At a strategic level the exploration strategy and associated activities to find new deposits; tactical focuses on the evaluation of existing mineral deposits and operational the day to day enhancement of the level of confidence in the geological model.

**Establish:** All the activities necessary to create a mining environment. (The full infrastructure)

At a Strategic level: Creating the mine, beneficiation plant, environment, supporting facilities & communities plus financing. At a Tactical level: Ensuring mid-term continuity & viability of the mining operation. Typically funded by capital expenditure e.g. sinking a new shaft, planning and building of extensions to an existing mine. At an operational level: The creation of further access to the ore body with all the associated supporting engineering infrastructure. Funded by operational fund (opex)

**Exploit:** For a given mine type, rock type and mining method, this process includes the breaking and removal of 'rock'. Rock is a generic term to describe all types of mineral resource host material. It also includes the transport of the broken rock and waste from working place to plant and/or stockpile.

**Beneficiate:** The Beneficiate process focuses on the processing of ores for the purpose of:

- Regulating the size of a desired product, removing unwanted constituents, and improving the quality, purity, or assay grade of a desired product.

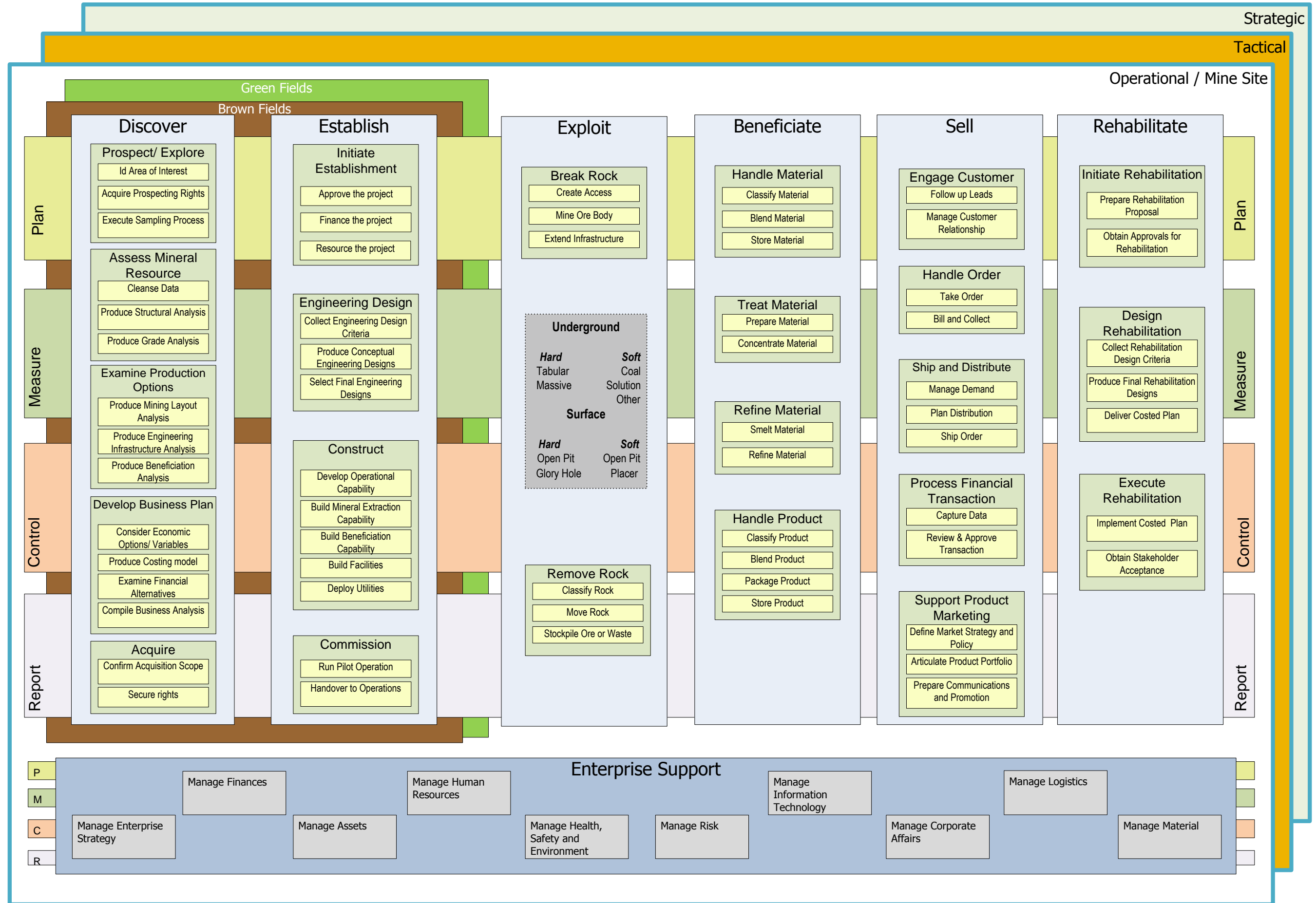
- Concentration or other preparation of ores for smelting by for example drying, flotation, or magnetic separation and improvement of the grade of ores by milling, flotation, sintering, gravity concentration, or other processes.

**Sell:** This process focuses on the dealing with customers in order to dispose of the product and attain revenue. This process also includes product marketing

**Rehabilitate:** This process focuses on returning the mining site to a desired 'improved' state concurrently with or after the primary mining and associated activities.

Planning for rehabilitation is now a key deliverable of any Exploration or Mining plan and must generally be approved before any Exploration or mining tasks can be undertaken.

EMMMv Members (on release date):



<http://www.opengroup.org/emmmv>

Comments are welcome. Please contact [s.viljoen@opengroup.org](mailto:s.viljoen@opengroup.org) regarding membership and participation



Strategic

Tactical

Operational / Mine Site

Green Fields

Brown Fields

Discover

Establish

Exploit

Beneficiate

Sell

Rehabilitate

Plan

Plan

Measure

Measure

Control

Control

Report

Report

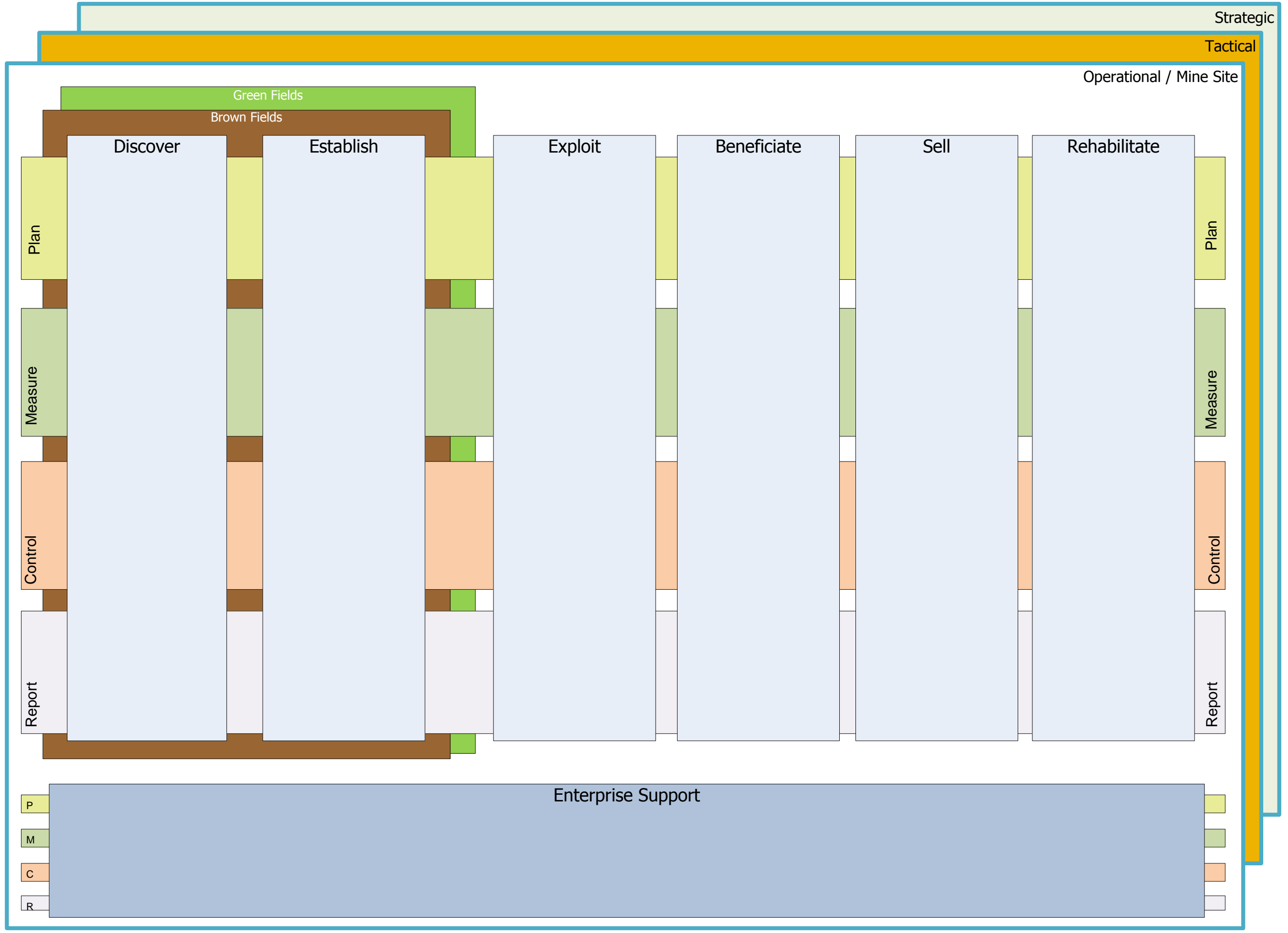
Enterprise Support

P

M

C

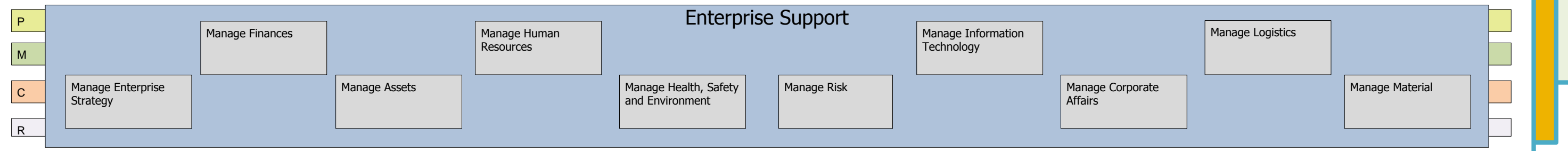
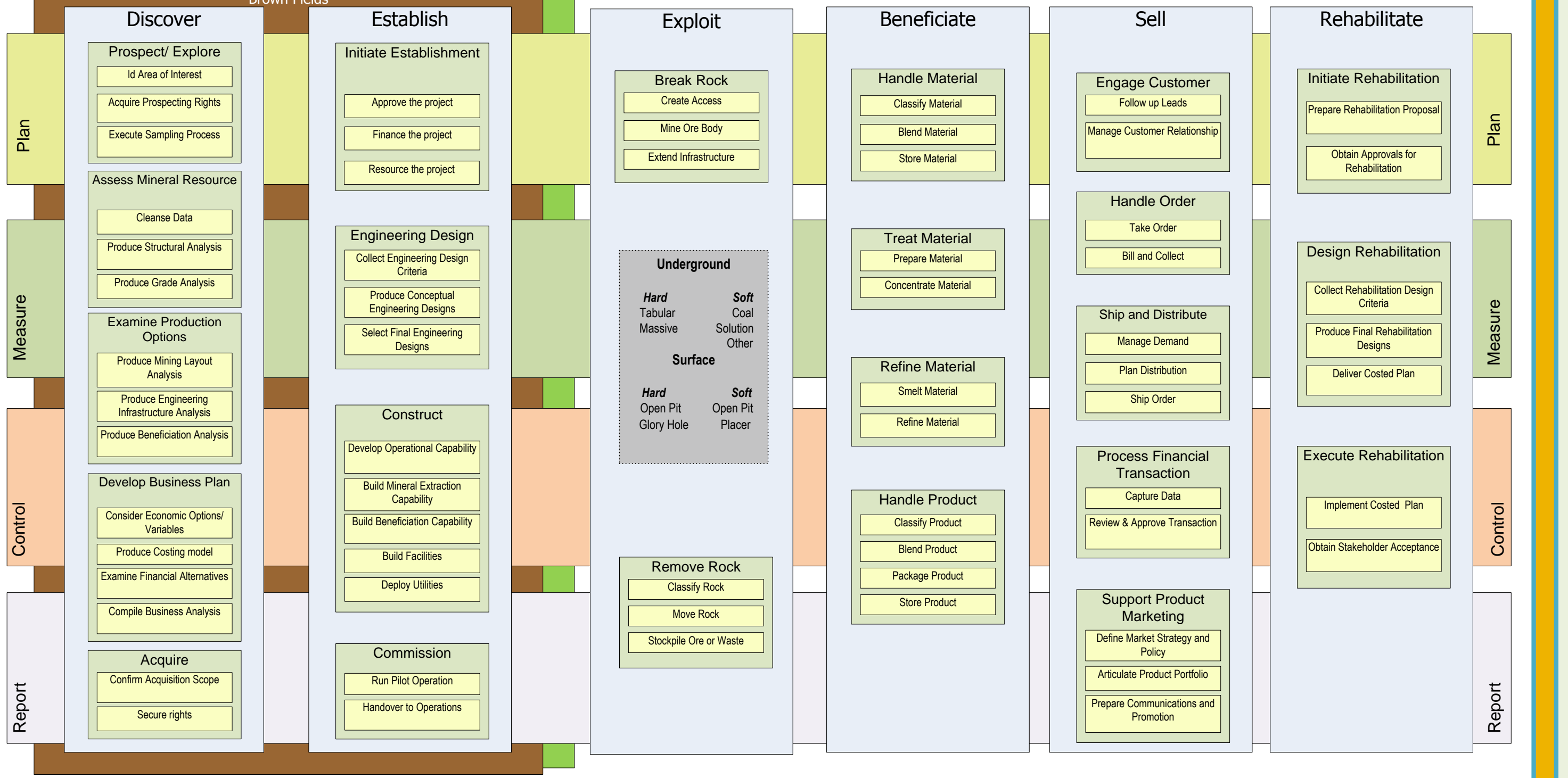
R



Operational / Mine Site

Green Fields

Brown Fields



P  
M  
C  
R

Plan  
Measure  
Control  
Report

Plan  
Measure  
Control  
Report

<b>Mine Type</b>	<b>Underground</b>				
<b>Rock Type</b>	<b>Hard</b>		<b>Soft</b>		
<b>Mining Type</b>	<b>Tabular</b>	<b>Massive</b>	<b>Coal</b>	<b>Other</b>	<b>Solution</b>
<b>Mining Method</b>	Self supported	Self supported	Self supported	Self supported	Frasch
	Supported	Supported	Supported	Supported	Hot water
		Caving			Leaching

<b>Mine Type</b>	<b>Surface</b>			
<b>Rock Type</b>	<b>Hard</b>		<b>Soft</b>	
<b>Mining Type</b>	<b>Open Pit</b>	<b>Glory Hole</b>	<b>Placer</b>	<b>Open Pit</b>
<b>Mining Method</b>	Single bench		Panning & sluicing	Single bench
	Multi bench		Hydraulicking	Multi bench
	Quarry		Dredging	Strip Mining