

Mine Closure Planning – An Important Pillar of Sustainability

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Depending on the stage of the mining operation it may be helpful to remind ourselves why we plan for closure - it is inevitable, all mines extract a defined resource. However, because we are dealing with a future event, its successful outcome can be shaped through proper planning and implementation of innovative strategies already adopted internationally. By optimizing the operation for successful closure, we can materialize significant economic savings for the company and at the same time increase the prospect of future sustainability by maximizing the beneficial post closure land uses for the adjacent communities. The approach to mine closure advocated for by SEMARNAT follows the international framework from the ICMM Toolkit reinforced herein.

A mine closure plan is a flexible and updateable document that describes the activities that need to be undertaken to decommission and rehabilitate the site, as well as the associated cost. In its conceptual stage, the plan is initially focused on the outcomes and goals for the site and starts with a view of what the restored site will look like after closure and whom the land will serve. In this nascent and abstract phase, the conceptual plan should be conservative and will inherently contain numerous assumptions and generalized strategies for realizing the closure objectives.

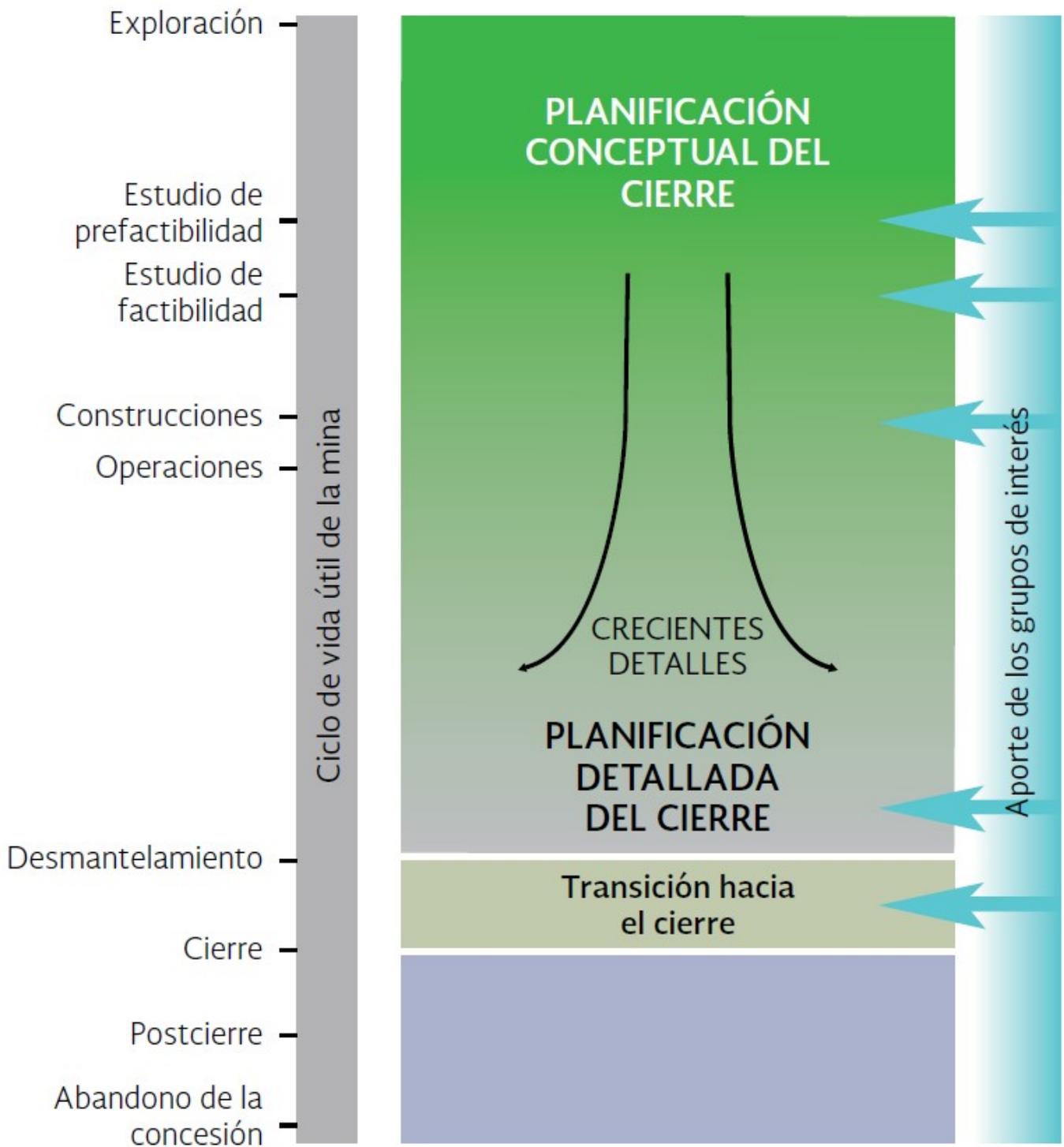
The conceptual closure plan should evolve together with the mine and be updated at key milestones to reflect emerging changes and risks in the operation. As development progresses, new studies are performed, environmental monitoring results are documented, and this increasing level of detail is incorporated into the closure documents. Realizing closure goals ultimately requires a progressive reduction of risks and unknowns that is based on sound engineering, science and results. With the closure vision outlined and monitoring plans in place, the closure plan begins to define its assumptions and progressively becomes more technically sound as earlier flawed assumptions are replaced with defensible, fact-based insights.

A detailed closure plan will be technically defensible and is focused on the granularity of what is involved in validating the sites rehabilitation targets and achieving long-term equilibrium with the surroundings. At this level of thorough planning, the document is typically used for financial assurance and should include accurate cost estimates for implementing the reclamation strategy. As closure becomes imminent, the emphasis on the approach is on analyzing as much as possible about the site and its interaction with its natural setting. Achieving a socioeconomic and ecological balance between the two locations is at the core of sustainability for the mining industry.

References:

Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). Guía para Conocer los Principales Trámites y Permisos Ambientales en las Diferentes Etapas del Proceso Minero. México, D.F.; N/A. 25p.

International Council on Mining and Metals (ICMM). Planning for Integrated Mine Closure: Toolkit. United Kingdom, London; 2008. 86p. - ISBN 978-0-9553591-8-7.



Planificación del Cierre Integrado de Minas, ICMM 2008.

