Image by Rekor.ai

Highland Valley Copper Mine

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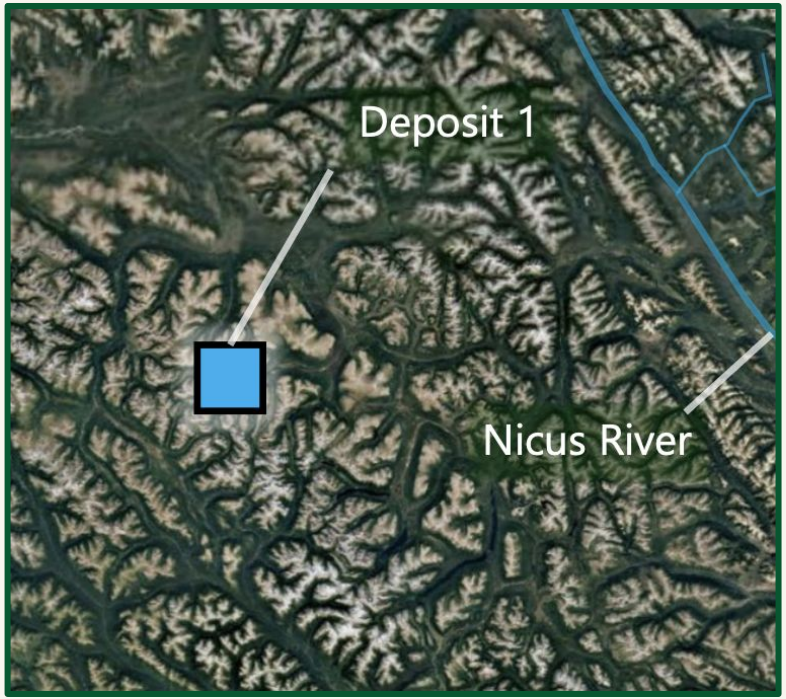
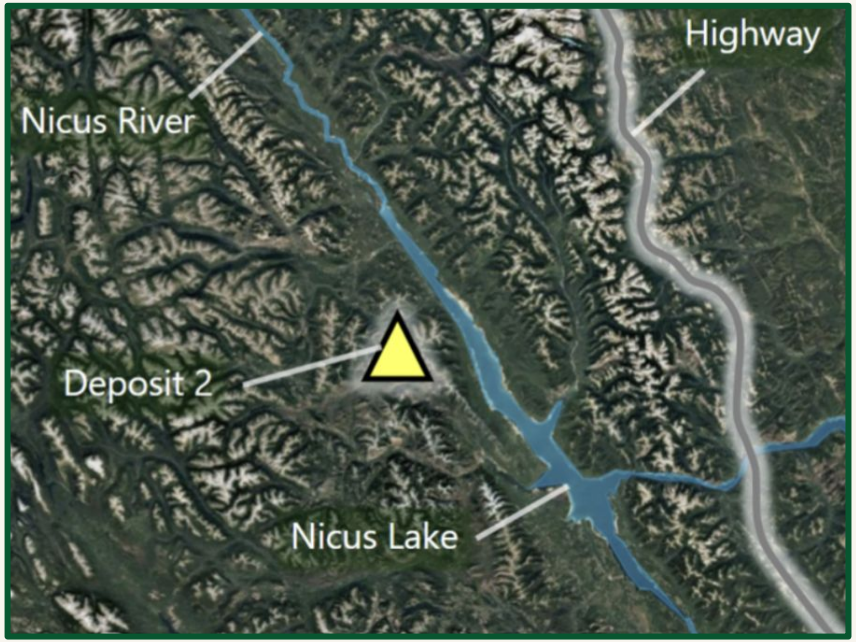
Deposit 1

- Shallow open pit; low grade ore
- Nearby valleys; tailing storage
- Low contamination risk
- Surrounding rock; stability
- Most remote; lack of engagement
- Extensive construction required; mountainous terrain
- Increased cost of labor and resources



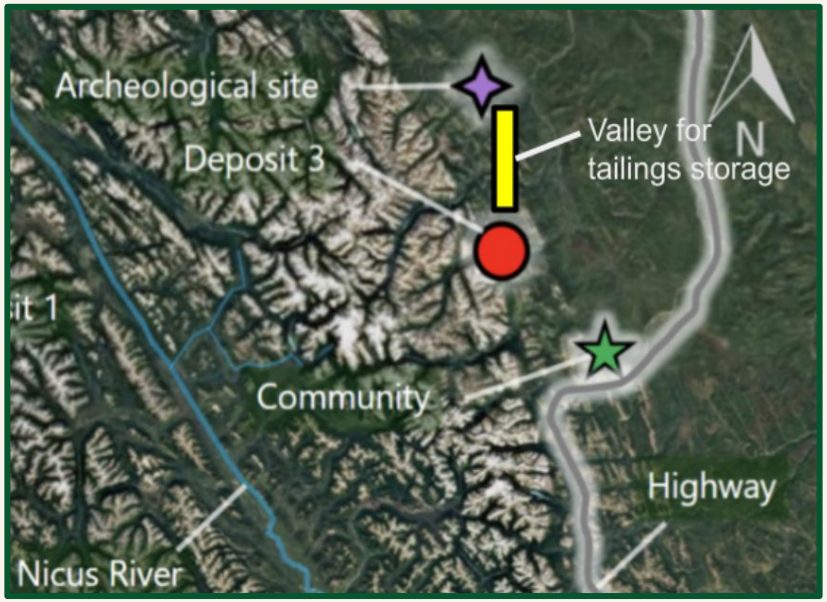
Deposit 2

- Deep narrow pit; underground extraction
- Moderate to high grade ore
- In close proximity to Nicus Lake
- Greater risk of contamination
- Requires infrastructure development; bridge and roads
- Less community engagement



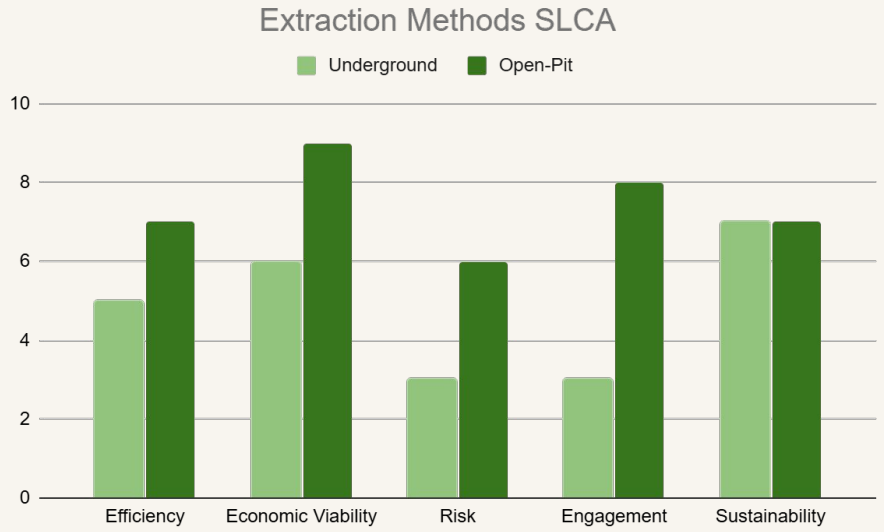
Deposit 3

- Moderately deep; ore grade improves with depth
- In proximity to a community and archaeological site; greater engagement
- Pre-existing valley nearby; tailings management
- Moderate Environmental Concerns; low contamination risk

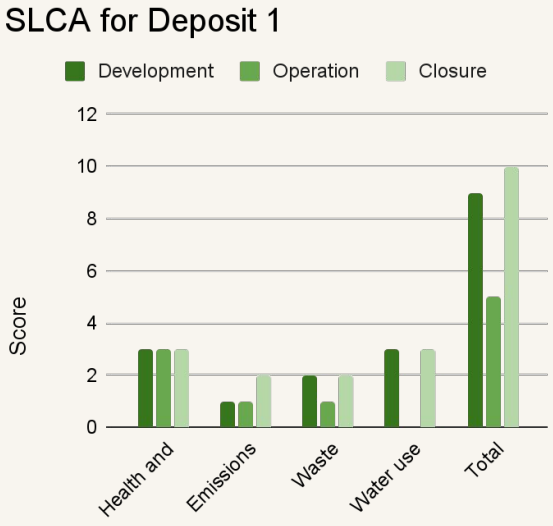


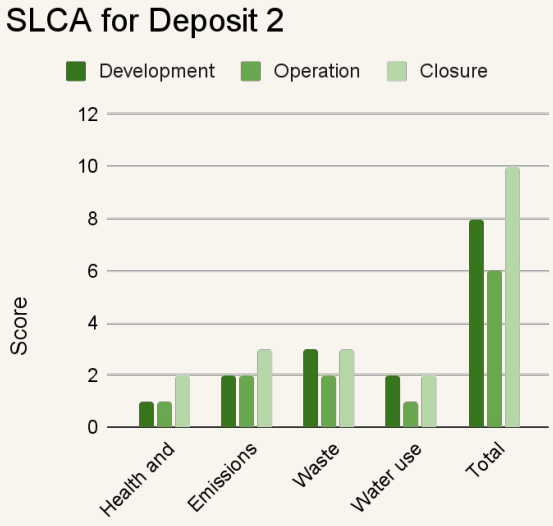
Our Extraction Method - Open Pit Mining

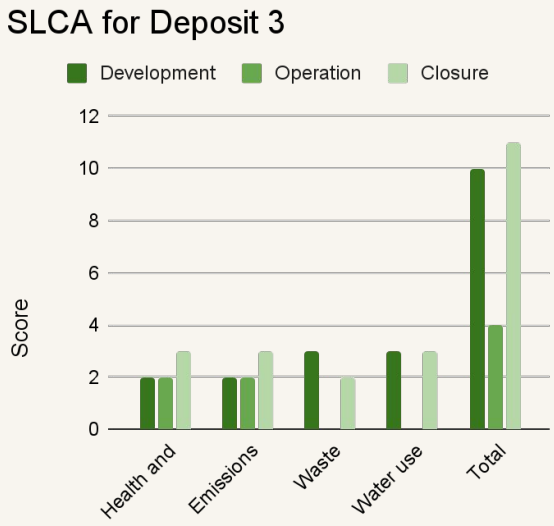
- Higher efficiency; greater extraction rate + shorter project timeline
- Greater economic viability; lower initial costs + greater profit
- Increased community engagement; workforce opportunities
- Fewer risks; safety + operational



Streamlined Life Cycle Assessment Yielded Inconclusive Results

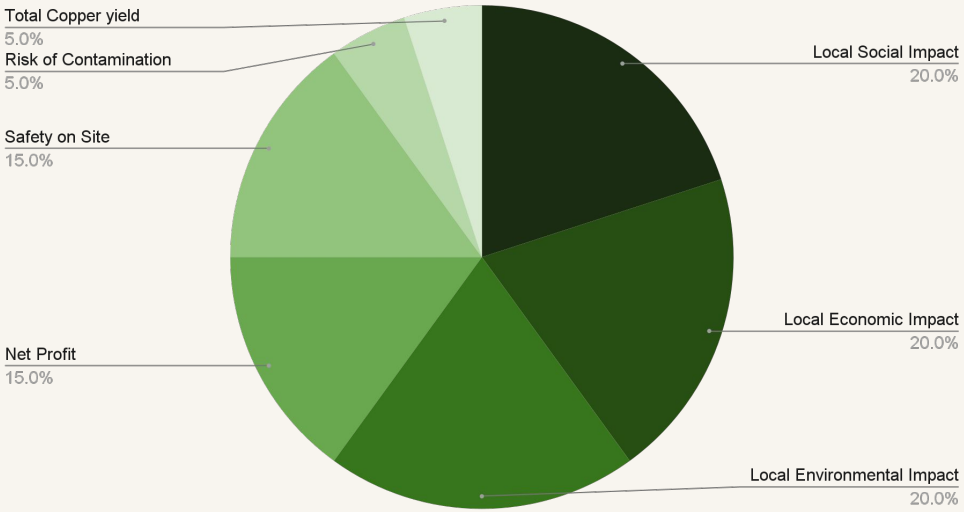




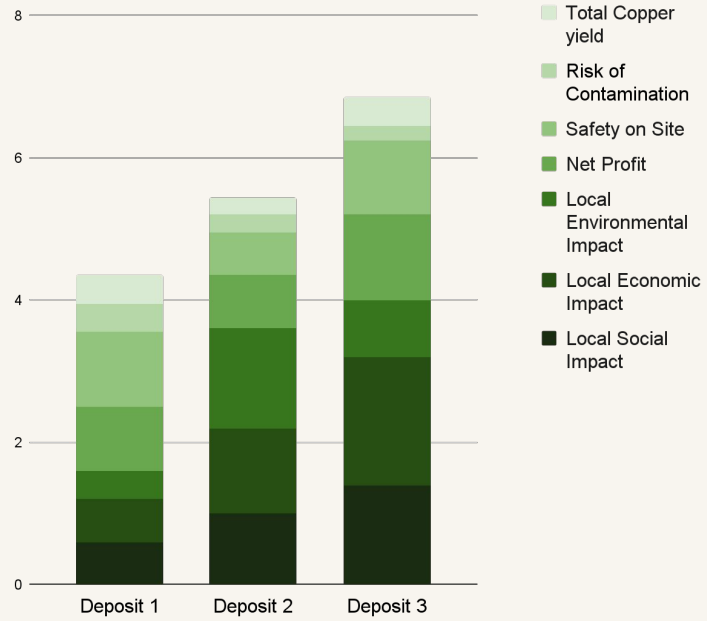


Deposit 3 Scored the Highest in the Weighted Decision Matrix

Weight Distribution

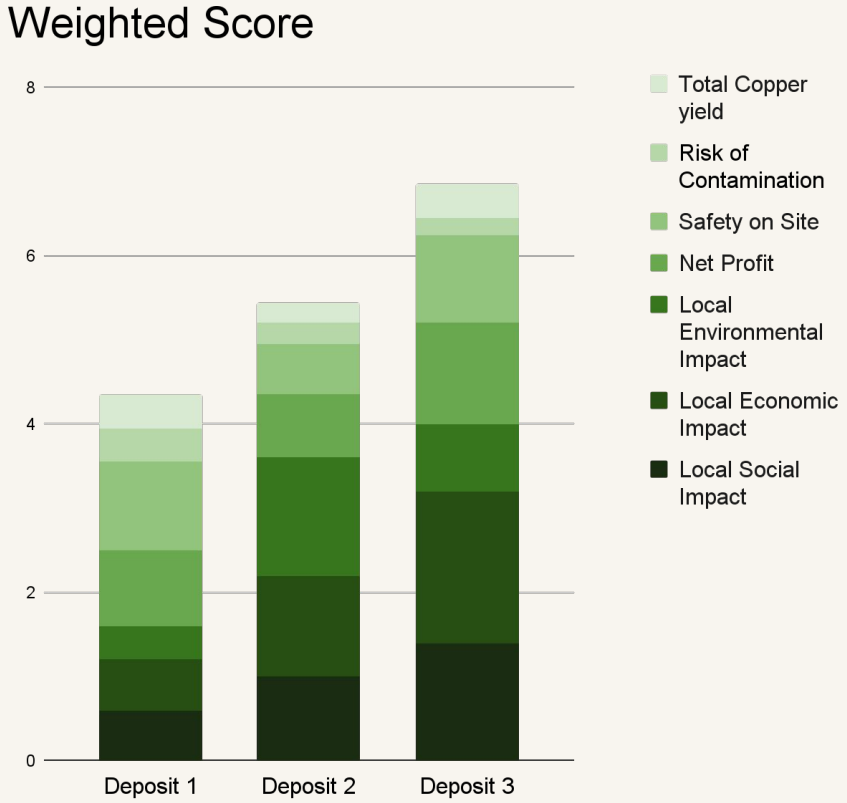


Weighted Score

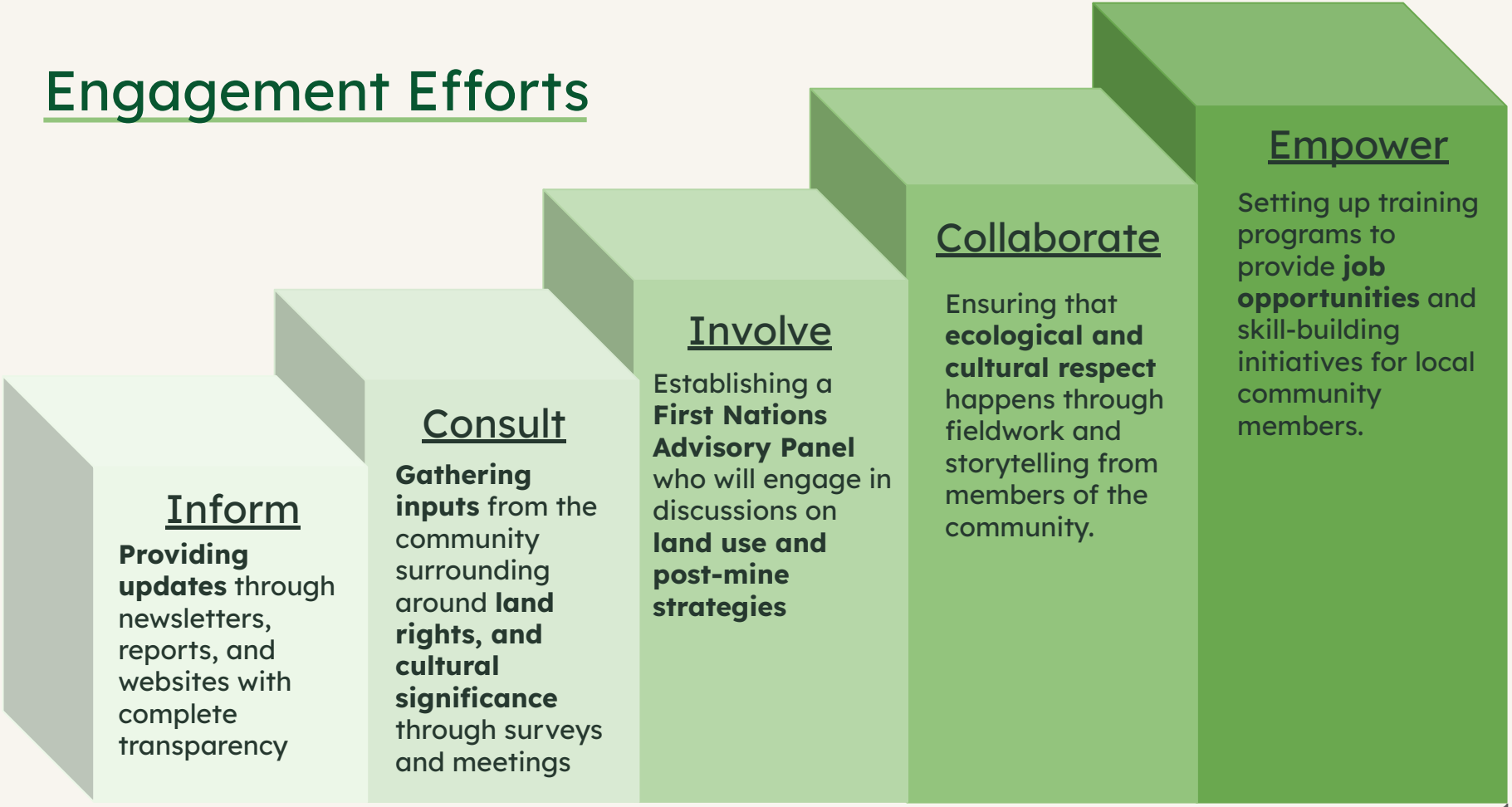


Our Decision - Deposit 3

- Ranked the highest when sustainability was assessed
  - WDM, SLCA
- Lowest upfront costs
  - Proximity to existing infrastructure
- Better accessibility
  - Local workforce + resources
- Highest profitability
- Effective mitigation strategies
  - Environmental + social impacts
- Better engagement with local community



Engagement Efforts



Impact on Community Throughout the Mine Life Cycle

Exploration

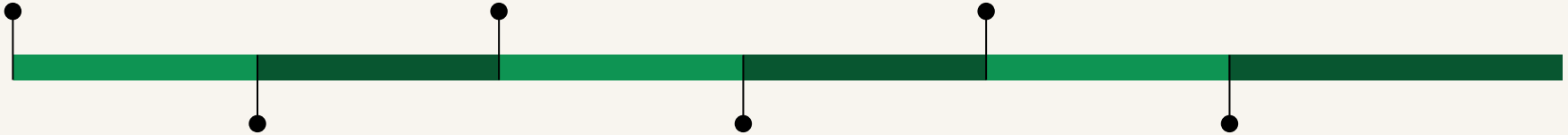
Surveying the community and land site, temporary land use restrictions, and potential increase in vehicle traffic.

Construction

Noise and environmental pollution, disruptions to residents' lifestyles, job openings, outside workers welcomed, and a boost to the local economy

Closure

Providing financial security options in advance and removal of equipment, causing disruptions similar to the construction stage



Assessments & Consultations

Town-wide community consultations and assessments, including door-to-door knocking for surveying to address possible oppositions.

Operation

Local revenue will rise with a surplus in jobs and local businesses with an increase in new infrastructure and programs with allocated profit

Rehabilitation & Monitoring

Returning mine to original state with continuous monitoring of impacted systems.

Operation Stage

Risk	Mitigation Measures
Worker Safety	Provide mandatory safety training, conduct geotechnical monitoring, and provide pit wall angle regulations
Air Pollution & Dust	Implement continuous dust suppression techniques such as water spraying
Community Relations & Indigenous Land Impact	Engage with local communities and integrate Indigenous knowledge into land management
Tailings & Waste Management	Implement progressive reclamation strategy, environmental monitoring and dry tailings storage practices.
Water Usage & Management	Implement water recycling systems
Noise & Vibration Impact	Use noise barriers and schedule mining during non-sensitive hours

Our Plan: A Reflective Future

- Restoration
  - Add soil to restore the land
  - Bring back trees, plants, and vegetation local to the community
- Safety
  - Incorporate fencing around the exterior of the mine
  - Ensure safety protocols in relation to contamination.
- Reflection of history
  - A lookout point for visitors to observe the open pit mine
  - An art “mural walk” to celebrate local culture and art community

River District Mural Gallery: Murals curated by local artists displayed around the river bank as part of the Vancouver Mural Festival

Generative AI statement

No generative AI was used in this presentation

Appendix - WDM

Criteria	Weights	Deposit 1		Deposit 2		Deposit 3	
		Raw	Weighted	Raw	Weighted	Raw	Weighted
Local Social Impact	20%	3	0.6	5	1	7	1.4
Local Economic Impact	20%	3	0.6	6	1.2	9	1.8
Local Environment Impact	20%	2	0.4	7	1.4	4	0.8
Net Profit	15%	6	0.9	5	0.75	8	1.2
Safety on site	15%	7	1.05	4	0.6	7	1.05
Risk of contamination	5%	8	0.4	5	0.25	4	0.2
Total copper yield	5%	8	0.4	5	0.25	8	0.4
Total			**4.35**		**5.45**		**6.85**

Appendix - Deposit 1 SLCA

Deposit 1	Development	Operation	Closure
Health and safety	3	3	3
Emissions	1	1	2
Waste generation	2	1	2
Water use	3	0	3
Total	**9**	**5**	**10**

Appendix - Deposit 2 SLCA

Deposit 2	Development	Operation	Closure
Health and safety	1	1	2
Emissions	2	2	3
Waste generation	3	2	3
Water use	2	1	2
Total	**8**	**6**	**10**

Appendix - Deposit 3 SLCA

Deposit 3	Development	Operation	Closure
Health and safety	2	2	3
Emissions	2	2	3
Waste generation	3	0	2
Water use	3	0	3
Total	**10**	**4**	**11**

Appendix - Extraction Method SLCA

Extraction Method	Underground	Open-Pit
Efficiency	5	7
Economic Viability	6	9
Risk	3	6
Engagement	3	8
Sustainability	7	7

Appendix - Operational Risk Assessment Matrix

Likelihood	Severity			
		Low	Moderate	High
	Low		Community Relations	Worker Safety
	Modetare	Water Usage		Air Pollution
	High	Noise Impact	Tailings Management	Indigenous Land Impact