

# Micro Mining

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## Current Status



Very few rural communities are in control of their destiny and would like to gain a stronger stance to the direction they wish to travel

Natural Resources have been largely exploited using a model of a stipend for the use of the land with the promise of jobs

Opportunity is to gain control of the resources through manageable organic growth of community owned companies



## Personal Observations of Many Rural Communities



- Social issues are the most pressing problem
  - Complaints of under funding, complaints of mismanagement
  - Competing constituencies causing more angst
- Economic models have been based on corporate objectives rather than community needs
  - Of course it is because that is who drives the agenda
  - Rural position has largely been one of protest as we have been put in that situation
- Systems used in resource exploitation geared toward highly educated and utilizes a network of specialists to keep the systems running
  - These systems marginalize the participation of the community in the process because of our education levels in the community



## Opportunity

- Communities have been reluctant to move into mining
  - Economic model lost
    - Advanced exploration rarely committed
  - Regulations
  - Costs not understood
  - Junior mining companies are trying to follow the larger companies...go big
- Communities can move into mining with confidence
  - Micro mining is the key





## Examples

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Small scale mining



## Location Chile





## Mine Location





**The setting, rural Chile, camp on the left, mine working on the right.**







## Low tech excavation techniques (pick and shovel)





## Low tech, manual winching





## Ore stockpile for toll treatment





## Southern Africa



## Historic diggings along an alluvial gravel run delineate part of an ancient channel





## Low Tech solutions













## Russia – Ural Mountains



# Sampling





## Open up the ore body





## Small Modular Plants





## But what about here in Canada?



## A Hypothetical Case

- Diamond Drilling proves reserves for prospect to be 150,000 ounces at 0.4 oz/ton
  - NI 43-101 compliant
  - Current Value
    - ~CDN\$ 90 million (@ C\$600/ tr oz)
- No one currently interested in this property... But You!
- Environmental assessment started with the understanding the property is going into advanced exploration stages



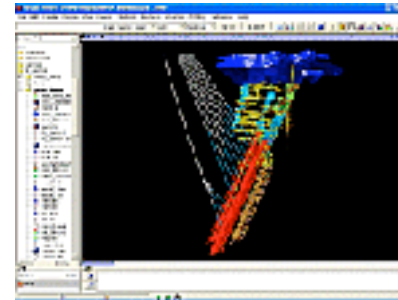


## Mine Plan / Development

- Proven reserves (Starting Point)

- Year 1 Get underground

- Hoist Plant and Shaft
    - Lateral development in ore
    - Set up for extraction
    - Set up for exploration



- Year 2 Mine 15 -20 000 ounces

- Review plan
    - Environment Assessment for Mining
    - Set up for exploration

<CDN\$ 5-7 Million



- Year 3 ....

CDN\$10.6 – 14.1 Million

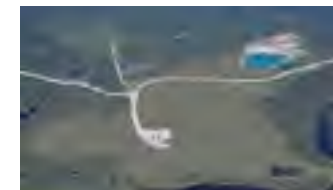
CDN\$10.6 – 14.1 Million





## Add the Mill and Closure Plan

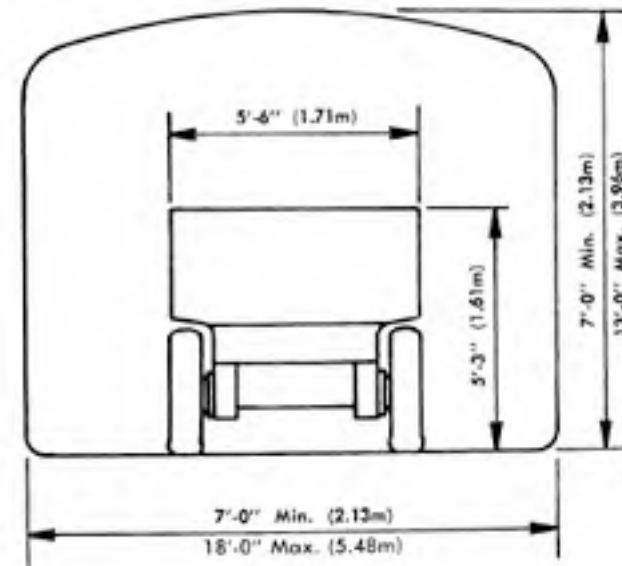
- Add the mill after engineering studies completed and the GO/NOGO gate is passed
  - < CDN\$2 Million
- Continue the mine review and keep exploring for new reserves





## Mine Plan / Development

- Use machines that are easy to use and repair
- Minimize material required to move to surface
- Minimize energy requirements per cubic meter





## Conclusion

- Communities can get to production without excessive expenditures
- Micro mining is the future for many Canadian companies by use of appropriate technology, manageable mining plans and a stewardship for the community first
- Golder Associates can make it happen





## In Closing

- **Mining can be community based and be a launch pad for development**
  - Community sustainability and stability can be derived from taking advantage of the material in the area
- **At Golder Associates Ltd...**
  - **We believe that the most sustainable thing in our communities are people and ideas**
    - We help balance ideas and the communities with real solutions
  - **We believe we have a lot of good people and ideas**
    - We want to work with communities and companies in developing their vision of Sustainable Development

