

Giant Mine Remediation Project Environmental Assessment Water Treatment and Management



Alternatives North

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Presentation Outline

- **Water Treatment Changes**
- **Unresolved Technical Issues**
 1. **Ice Thinning**
 2. **Water Quality**



Water Treatment Changes

- New water treatment plant a good thing

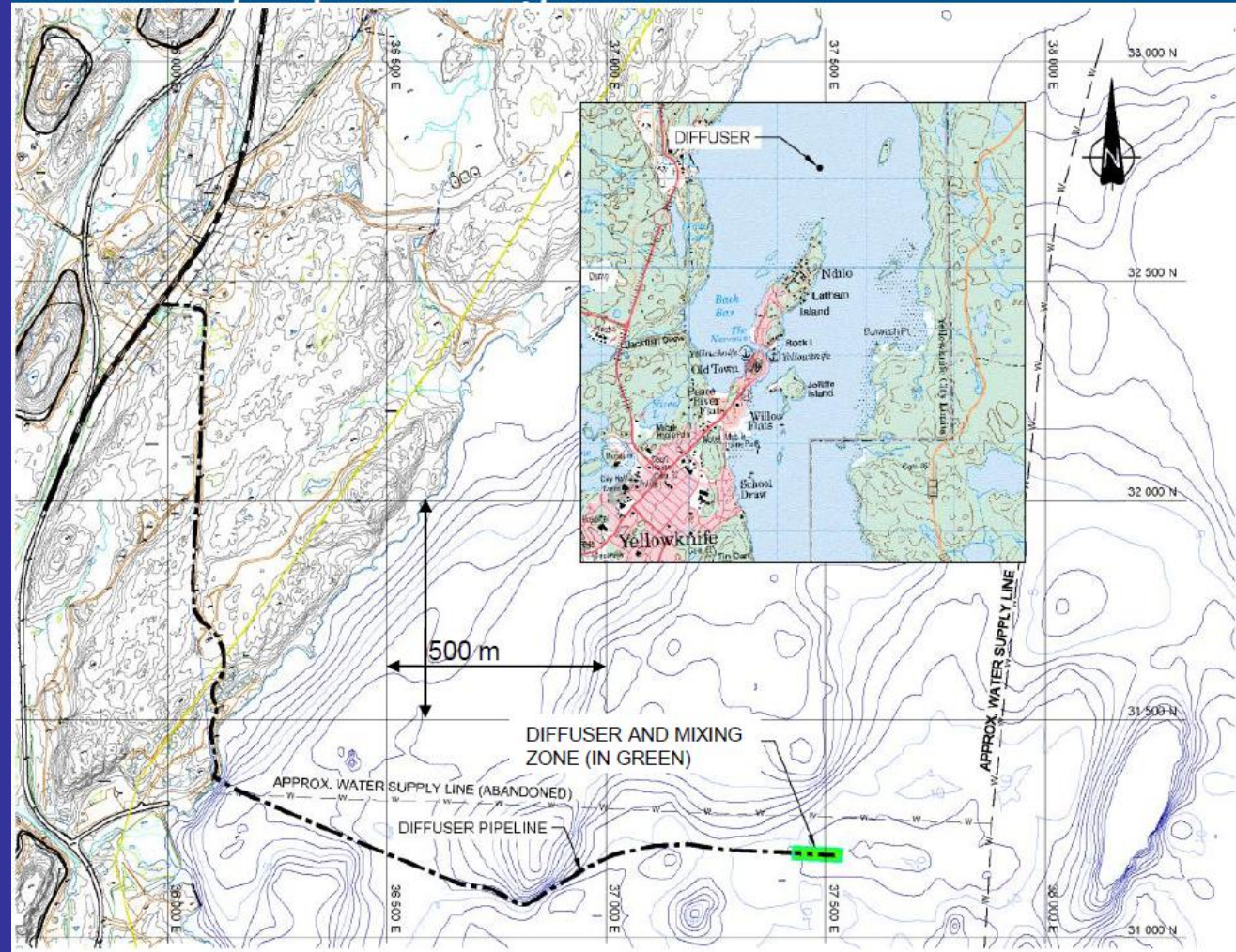
BUT

- Significant changes in discharge timing and location
- Moved from summer discharge into Baker Creek to year-round operation in Back Bay
- No final design for treatment plant
- Ice thinning and water quality issues not resolved

Unresolved Technical Issues

ICE THINNING

81 m long
diffuser to
be placed in
Back Bay
(at least
9 m below
surface)



Unresolved Technical Issues

ICE THINNING

- Issue of ice thinning due to year-round discharge was raised as early as July 2010
- Most recent presentation by Developer (June 2012) stated “local thinning of ice may occur”

Unresolved Technical Issues

ICE THINNING

- In June 2012 Developer would not commit to no ice thinning, only that ice would be “safe”
- Developer could not define “safe” and for whom (walkers, skiers, snowmobilers, Bombadiers?)
- Particular public concern with the effects on shoulder seasons when ice forming and melting

Unresolved Technical Issues

ICE THINNING

- Developer collected some ice data in February and March 2012 but has not used this to predict ice thinning
- Developer has not carried out any thermal modeling of the diffuser discharge to predict ice thinning

Unresolved Technical Issues

ICE THINNING

- Significant public safety concern
- AN recommended that Developer do following before approval
 - Complete thermal modeling and field tests
 - Prove to regulatory authorities that ice will not be thinned
 - Conduct ice monitoring and publicly report

**Developer—further discussion required,
term ‘approval’ vague**

**AN stands by recommended measure to
mitigate public concern**

Unresolved Technical Issues

WATER QUALITY

- **Developer has not carried out modeling of the diffuser discharge to predict water quality in Back and Yellowknife bays**
- **Developer relies on a 2006 risk assessment of arsenic loadings which does not account for sediment disturbance, currents or ice cover**

Unresolved Technical Issues

WATER QUALITY

- **Modeling should feed into risk assessment**
- **Risk assessment not a substitute for good modeling and sound predictions**
- **Developer reaches unsupported conclusion of “no significant adverse environmental effects”**

Unresolved Technical Issues

WATER QUALITY

- Residents continue to use Back and Yellowknife bays for drinking water, fishing and recreation
- City of Yellowknife examining Yellowknife Bay as a source of drinking water
- Developer will not commit to pay for extra water treatment costs in the event of accidents, malfunctions or unpredicted effects

Unresolved Technical Issues

WATER QUALITY

- **Significant public concern around water quality changes in Back and Yellowknife bays**
- **Potential for significant adverse environmental impacts to water quality in Back and Yellowknife bays**

Unresolved Technical Issues

WATER QUALITY

- AN recommended that Developer do following before approval
 - Complete water quality modeling
 - Commit to pay for extra water treatment costs
 - Prepare a comprehensive aquatic effects monitoring program

Developer—further discussion required, term ‘approval’ vague, agree with monitoring program

AN stands by recommended measure to mitigate public concern