

# **Heavy Industrial to Residential Conversion**

## **Recycling an Entire Abrasives Plant**

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**Associated Brownfields Inc.**

St. Catharines, Ontario

**Show Me the Money: Maximizing Your investment**

**Canadian Brownfields 2009**

**Vancouver, October 27, 2009**





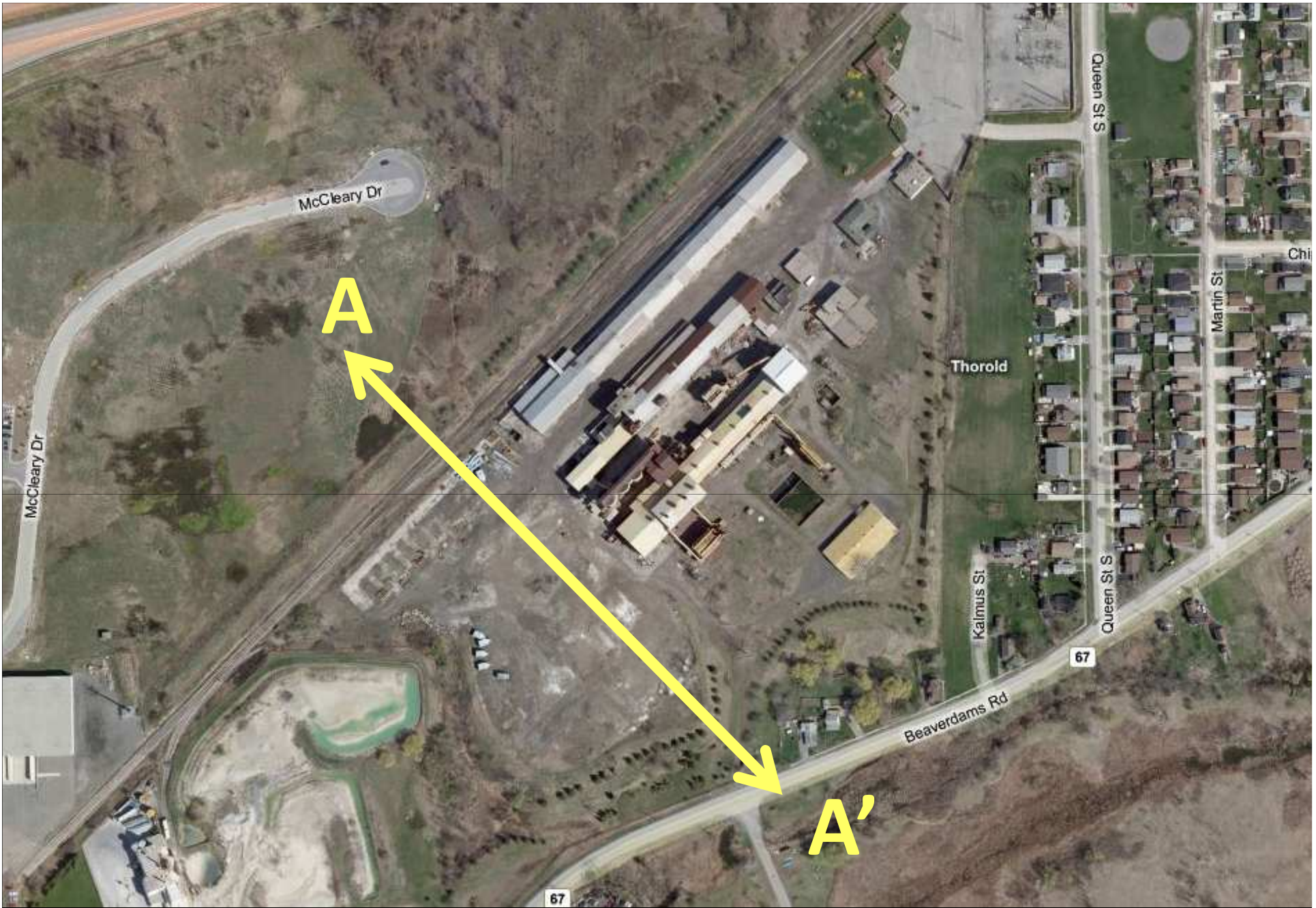
- former Exolon ESK Abrasives
- property now owned by Thorold Park Redevelopments Inc, a wholly owned entity of Associated Brownfields Inc



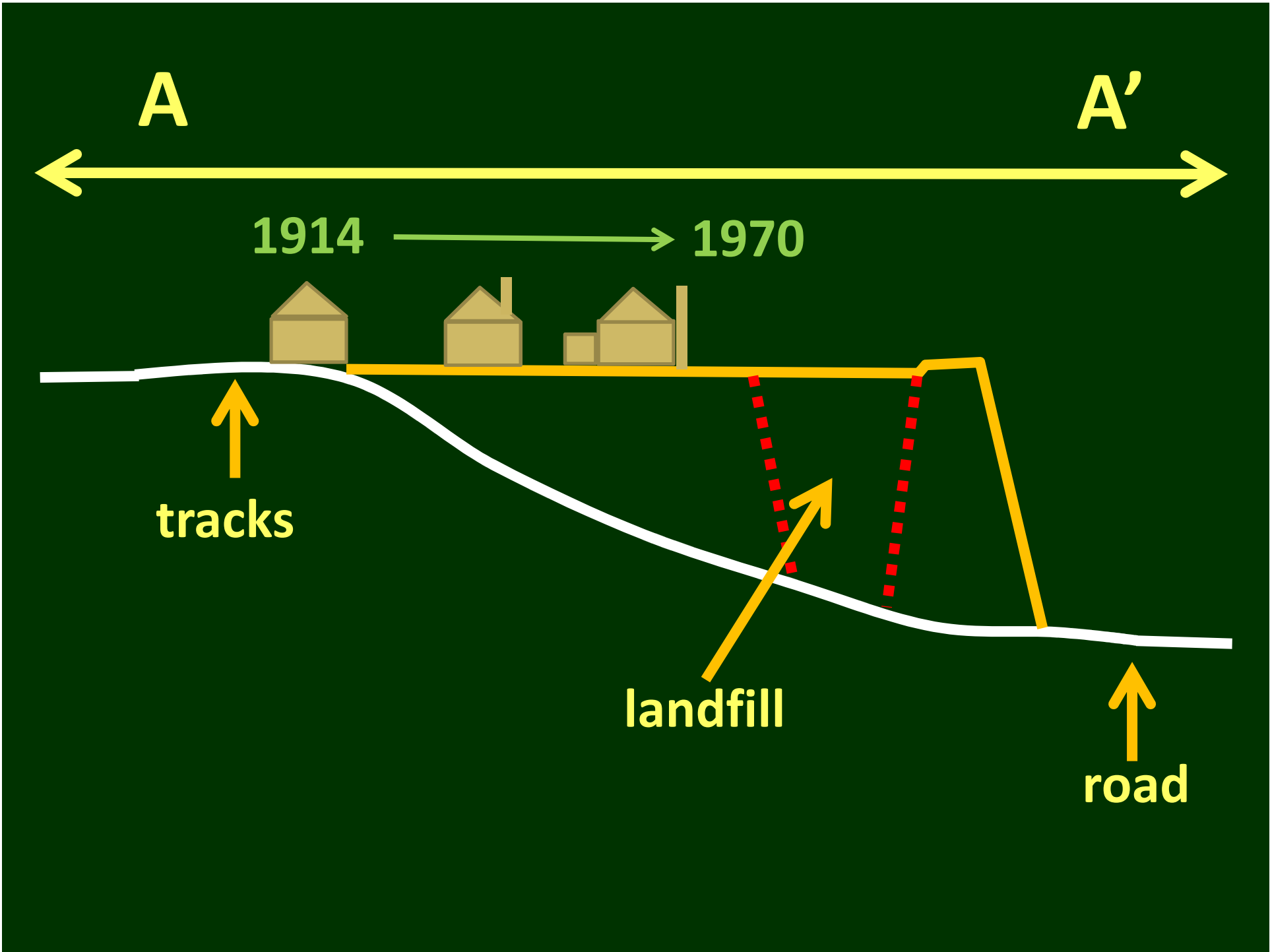
**Associated Brownfields**







Associated Brownfields



# Raw Materials

- bauxite
- scrap alumina
- petroleum coke
- silica sand

# Major Products

- aluminum oxide
- silicon carbide
- ferro silicon

# Materials on Site (in the veneer)

- all of the above raw materials and products
- graphite
- black sands
- brown sands

# Mass of Materials on Site

i.e., in the veneer

about 400,000 T in total,

with about 200,000 T in the  
landfill

# Environmental

- innumerable studies for PCBs, radio-actives, dust
- ESAs - Phase 1s, Phase 2s, etc. from several sources

Environmental, cont.

- concluded that soil veneer over original surface was all a contaminant
- \$25 million to clean up

Environmental, cont.

- ABI performed its own due diligence, including a new Phase 2 ESA
- concluded that soil veneer was a potential resource



in the mean time.....

demolition of all but one  
building, and recycling of  
virtually 100% of the materials  
recovered



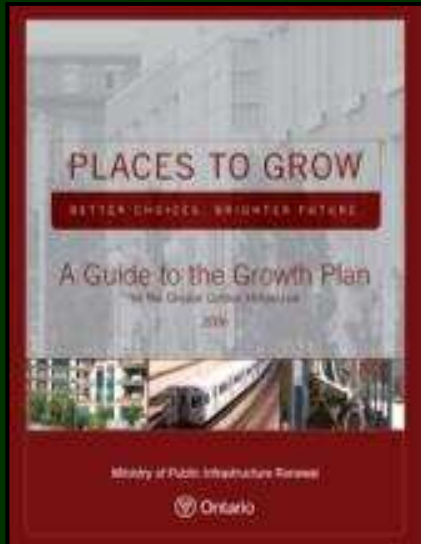


back to the 'contaminated' veneer.....

- ABI determined there was a good likelihood to recycling the resource, if we could figure out how to do it economically, even at a nominal cost

- ABI purchased the property with a view to going residential on as much as possible (i.e. more than just the 11 acres of clean land)

- the break - a \$1 million Places to Grow grant from Ontario Ministry of Economic Development



- to find a cost effective, transferrable method of recycling of the veneer rendering the remaining land suitable for residential use



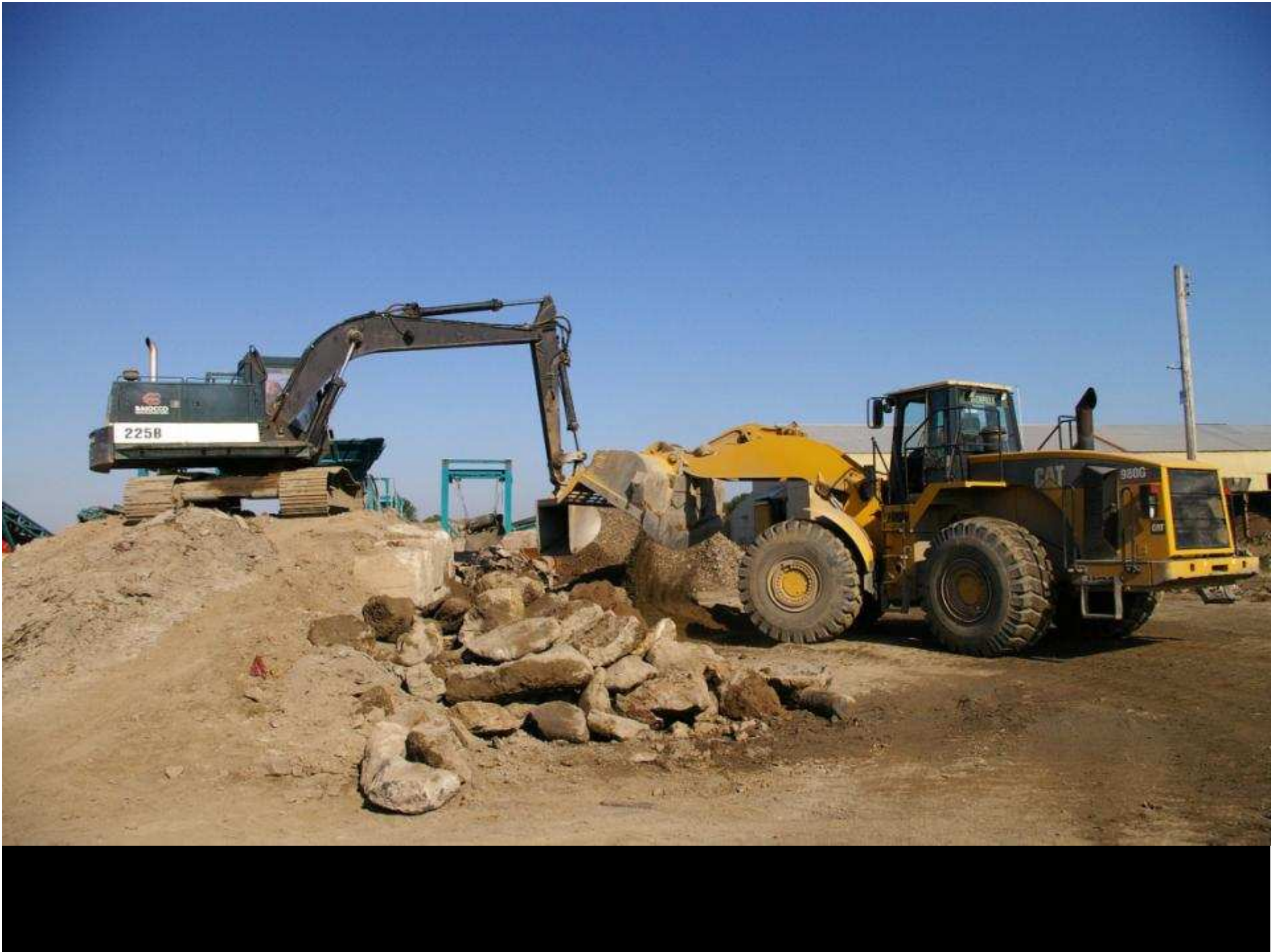
experimentation

Experiment determined that there were several separable products....

- alumina products
- ferro silicon
- silicon carbide
- graphite
- 'fused brown' aluminum oxide

- determined that 'brown sands' of the veneer were largely alumina and could be recycled
- and that 'black sands' of the veneer were largely sharp silica sands with petroleum coke that could also be recycled

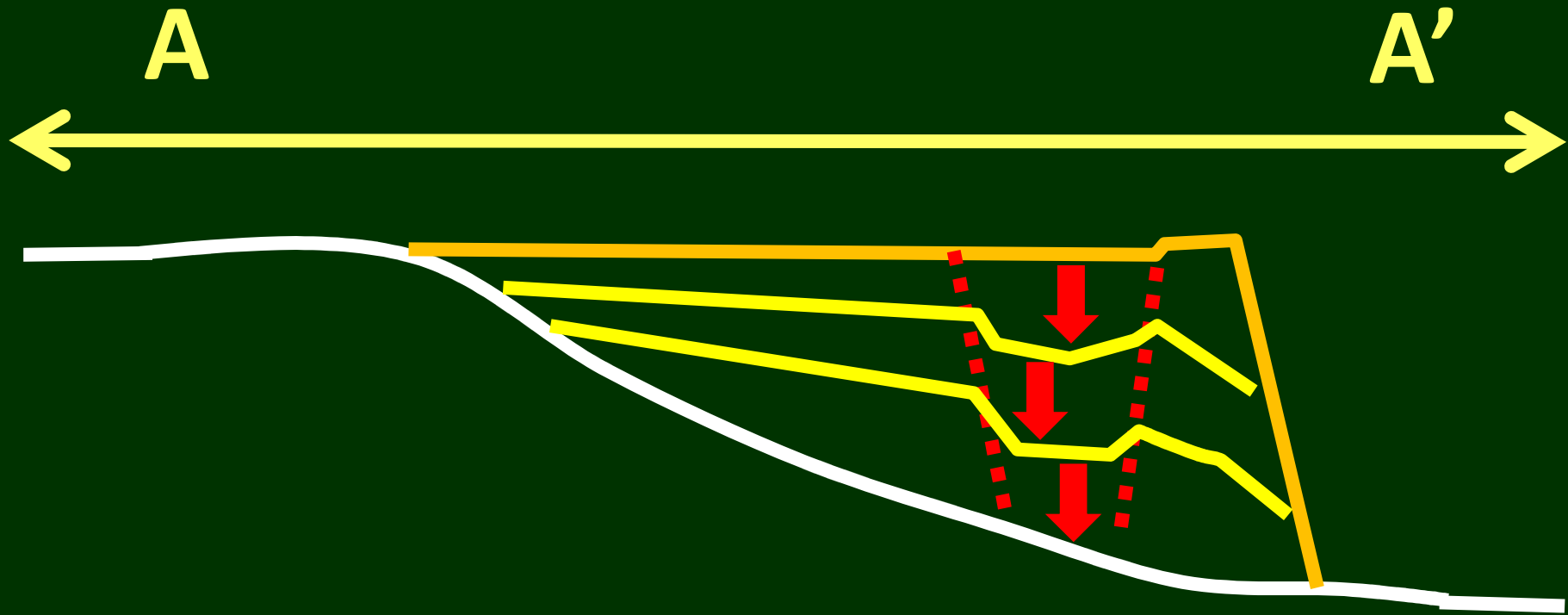
the experiment morphed into a small  
production facility as we marketed the  
various experimental products





while this was occurring, we applied for the various Ministry of Environment Certificates of Approval to run the experimental plant as a recycling facility, and also to 'mine' the 200,000 T landfill

we are now starting to make steady progress in finding markets for the products, continuing the mining and recycling.....



and reducing the amount of veneer as it comes closer to the clean original land surface

also, removing the veneer completely from one section of the site, before tackling the next, allows for a phased approach to development.....

- 11 acres clean now
- 20 acres by spring
- remaining 10 acres by late 2010

# Economics of the Recycling

- the 'contaminated' veneer was originally a \$25 million liability, such that the cleanup and redevelopment of the site could realistically never occur

## Economics, continued

- instead, the recycling to date has rendered the development of the site economically viable
- **PLUS** the benefit of a transferable technology

applications are currently in to  
the City of Thorold for  
subdivision and draft plan  
approvals, and the construction  
of the first of 520 homes should  
commence in the spring

# questions