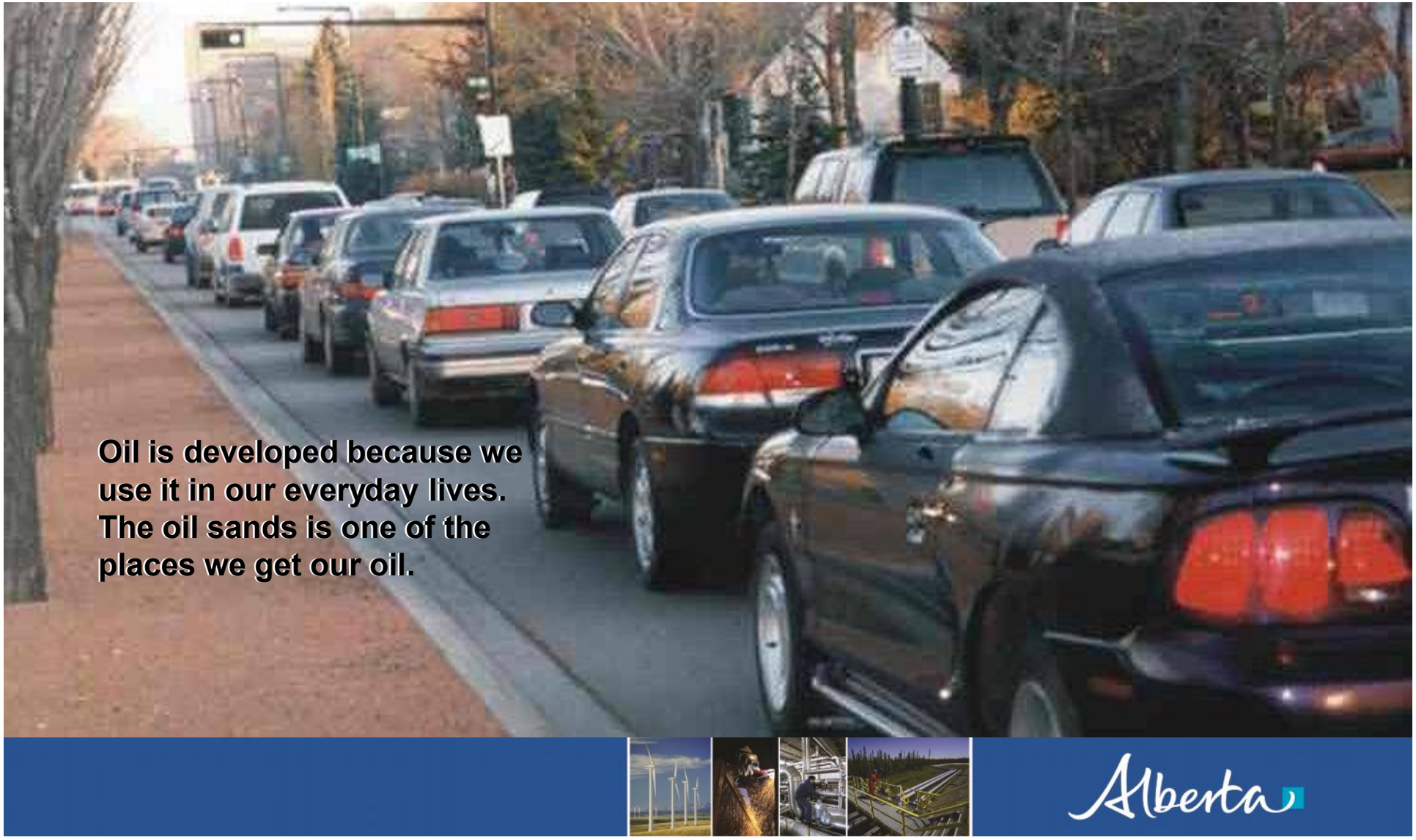


Alberta's Oil Sands
Resourceful. Responsible.

Peter Watson
Deputy Minister, Alberta Energy




Consumer energy choices



Alternative and conventional energy required

- Shifting to other sources of energy is vital, but we will still need oil and gas.
- In their 2009 Energy Outlook, the International Energy Agency forecast that world oil demand will continue to increase by 1% per year to 2030.

Impacts must be reduced

- During the transition to alternative low-carbon energy sources, the environmental impact of our fossil energy production and consumption must be reduced.

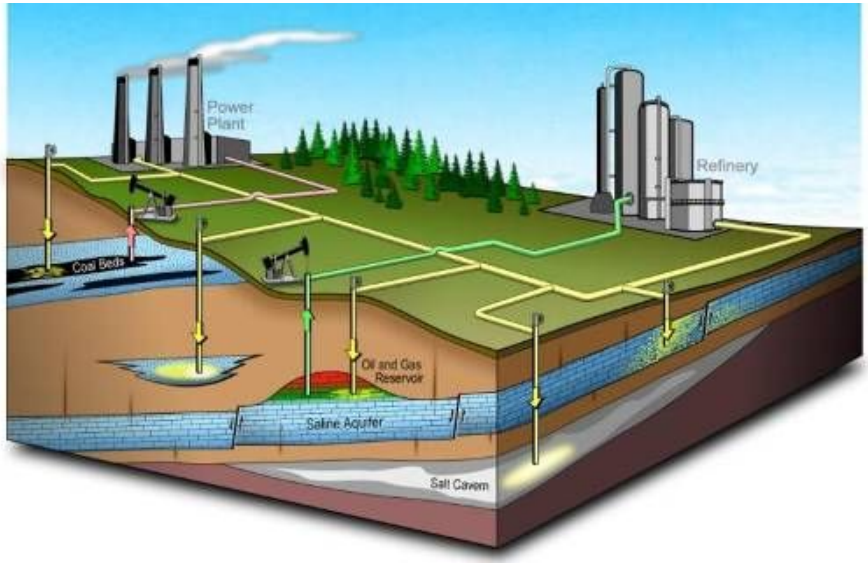
- Technology is key to reducing those impacts.

- Oil producing jurisdictions have a responsibility to invest in and develop the technology.

Carbon Capture and Storage (CCS)

- Key element of Alberta's Climate Change Strategy.

- $2 billion for large-scale CCS projects—among the largest single capitalized funding investments by any jurisdiction in the world.



- Public funding will accelerate the development of projects and encourage investment from industry to make large-scale CCS projects viable.

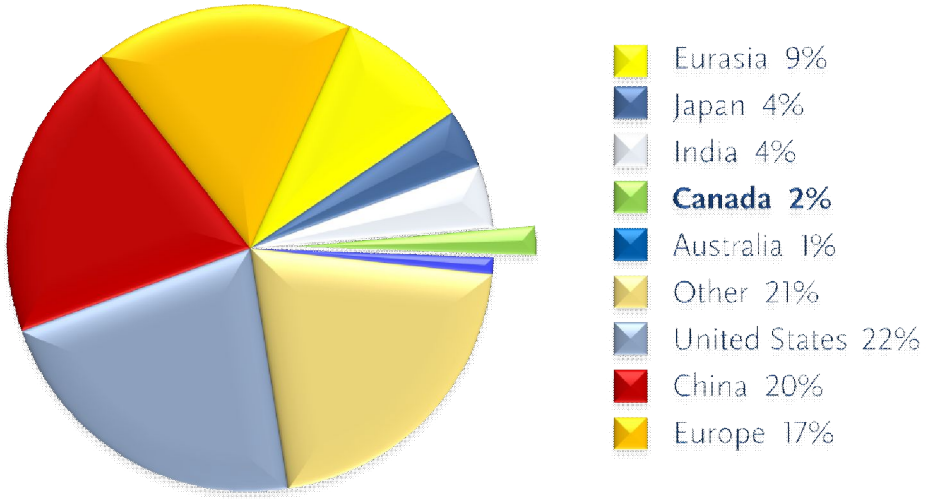
"President Obama and this Administration are strongly committed to the development of carbon capture and storage technology as a key part of the clean energy economy."

- U.S. Energy Secretary Steven Chu

Alberta

Oil sands and GHGs

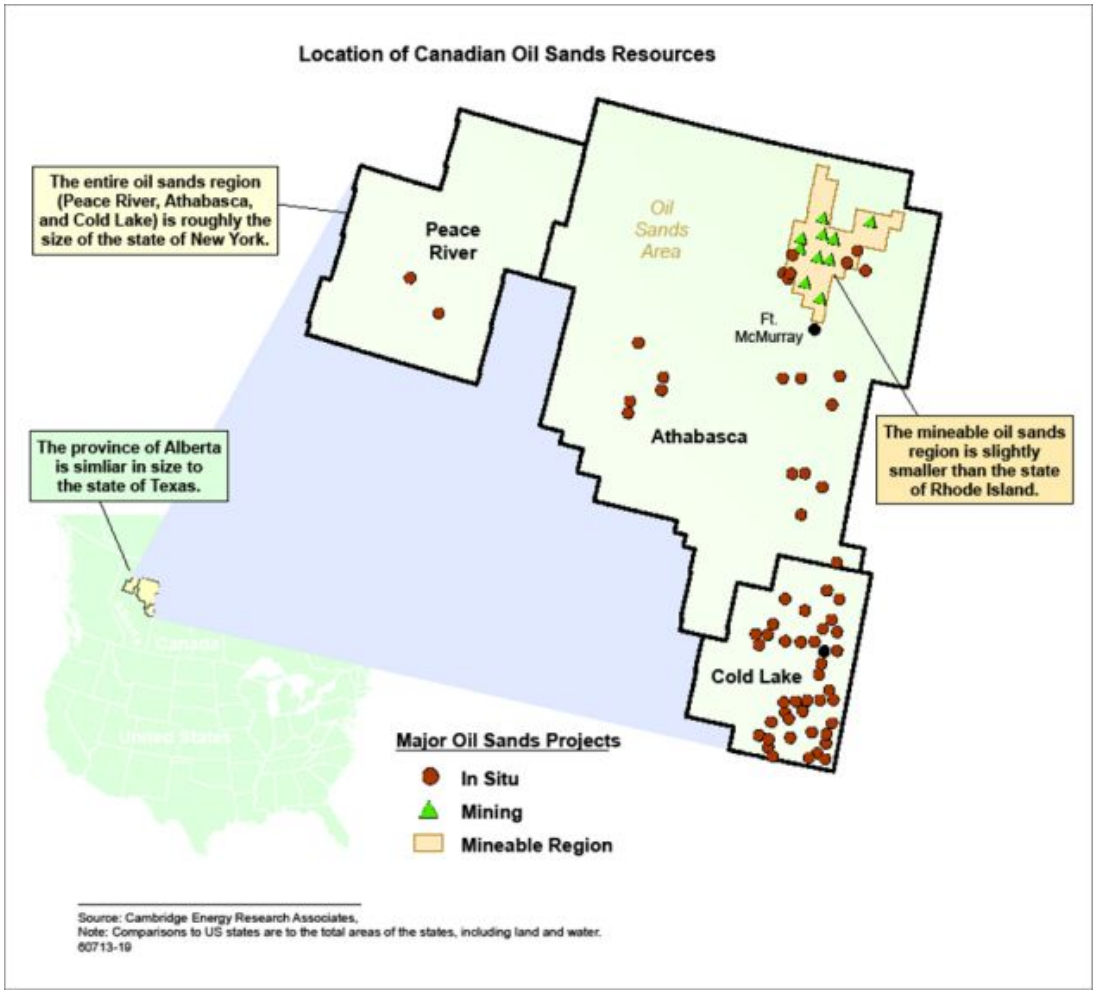
- The oil sands in a carbon constrained world…
  - **Oil sands = 5% of Canada's emissions**
  - **Canada = 2% of global emissions**
  - **Oil sands = 0.1% of global emissions**
  - **Oil sands carbon intensity is decreasing, while the carbon intensity of 'conventional' sources is going up.**
  - **Oil sands producers have reduced average per barrel GHG emissions by 39% between 1990 and 2008.**



Alberta's oil sands account for less than 1/10 of 1% of GHG emissions

The challenge is as production increases, so do total emissions.

Where are the oil sands?

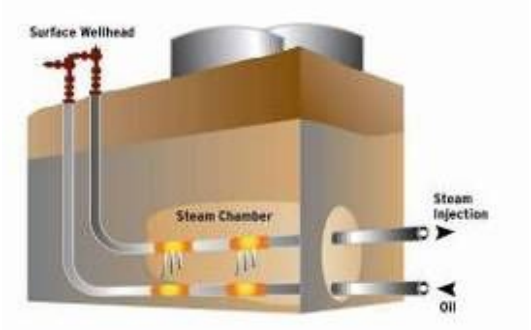


- Oil sands deposits:
  - 54,903 miles2 **(142,200 km^2)**
- Surface mineable deposit:
  - 1,853 miles^2 **(4,800 km^2)**
  - about 1.25% of Alberta's Boreal forest area
- Less than 30% of mineable area has been approved for mining
- Land disturbed to date:
  - 232 miles2 **(602 km^2)**

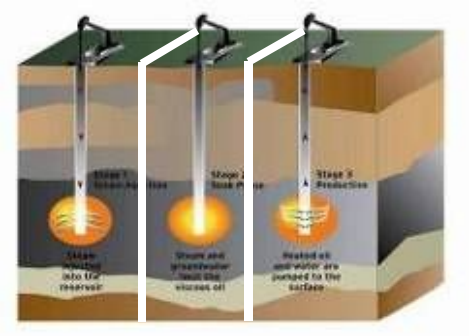
Oil sands: in situ and mining

In situ

Steam Assisted Gravity Drainage



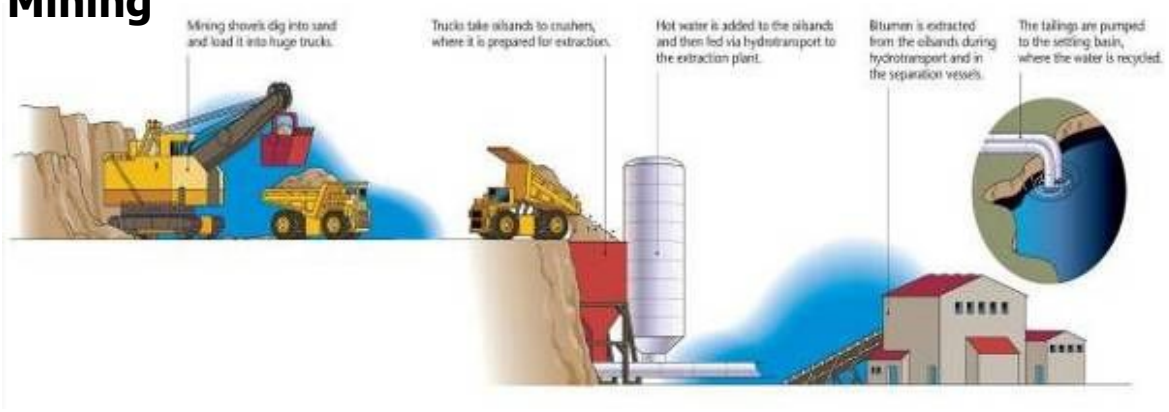
Cyclic Steam Process



In Situ:

- 80% of resource
- 45% of production

Mining

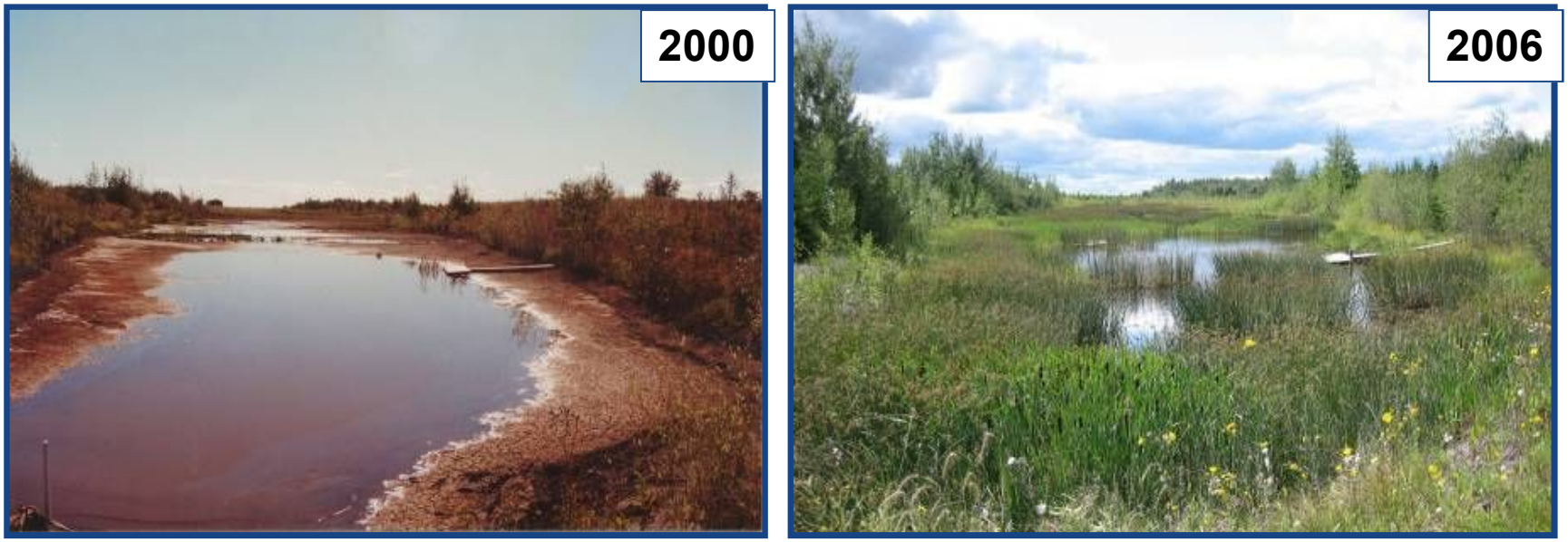


Mining:

- 20% of resource
- 55% of production

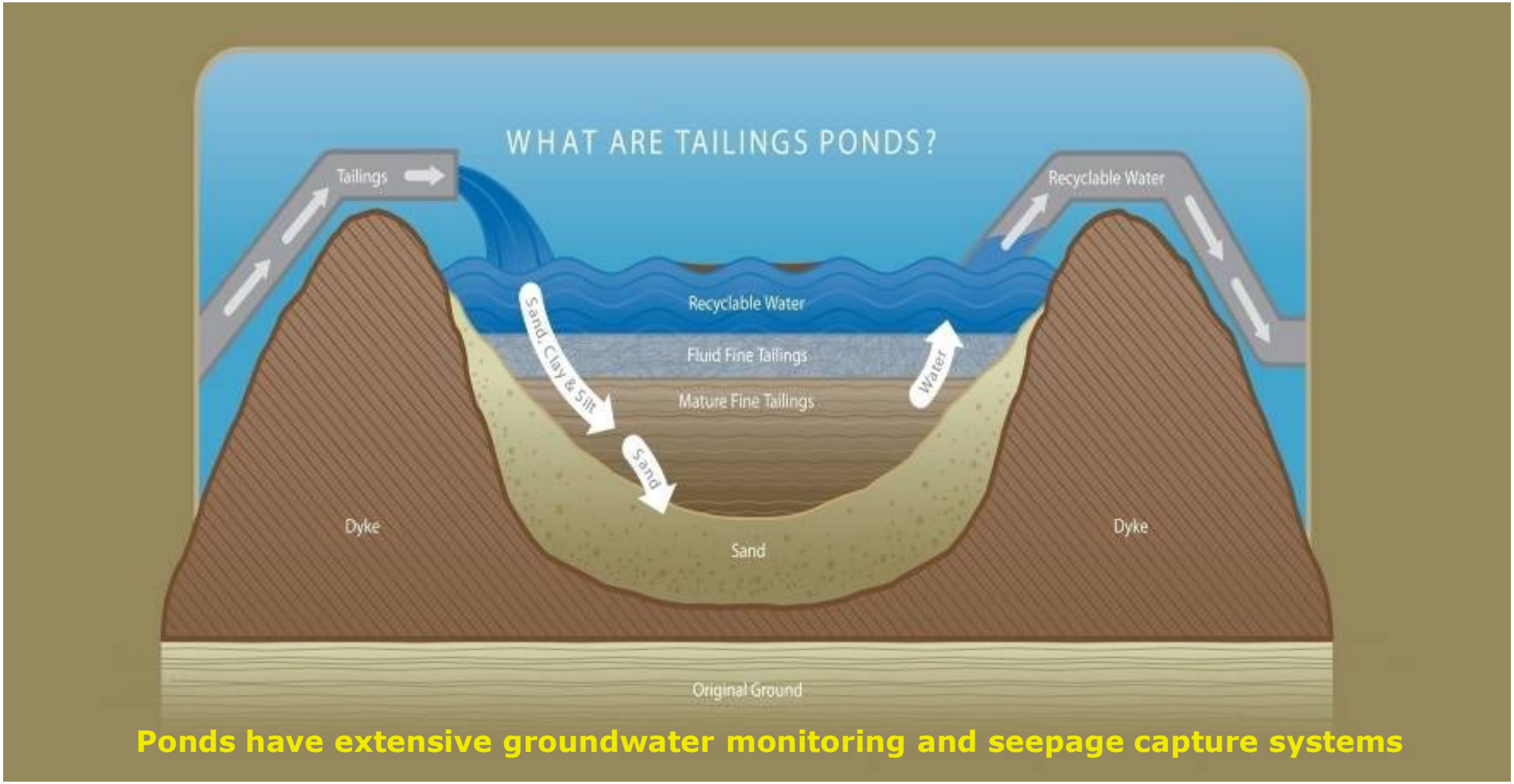
Alberta

Land reclamation potential



Research demonstrates the reclamation potential of wetlands.

Management of tailings ponds



Ponds have extensive groundwater monitoring and seepage capture systems

Management of tailings ponds

- Returning to a sustainable landscape can take decades to 150 years.
- Alberta has more than 170 km^2 of tailings ponds.
- New tailings management technologies and policies will shorten lifespan to **10 years or less.**
- ERCB Directive – faster reclamation; less fluid tailings.
- Industry has committed more than $1.5 billion in upgrades to comply with the directive.

Ponds contain water, residual bitumen and some sand

Government of Alberta

Alberta

Freedom To Create. Spirit To Achieve.

Energizing Investment

A Framework to Improve Alberta's Natural Gas and Conventional Oil Competitiveness

Energizing Investment - Fiscal

- New fiscal framework will harness new technologies to tap unconventional gas resources and tight oil reserves and extend the life of existing conventional resources.

- Technology is key to reducing those impacts.

- Oil producers and producing jurisdictions have a responsibility to invest in and develop the technology.

Energizing Investment - Regulatory

- Layers of regulations, complexity are a deterrent to new investment, and a barrier to delivering social, economical and environmental outcomes.

- Broad regulatory review will ensure system is modern, efficient, performance-based and competitive.

- Changes will reduce delay and costs and encourage innovation.

Land-use Framework

- Oil sands development and environmental management go hand in hand.
- Alberta is developing plans for seven regions that consider social, environmental and industrial activities within each region.
- Framework provides clear direction, and addresses cumulative effects of development on Alberta's water, land and air.

Lower Athabasca Regional Plan

- Home to our oil sands—our first priority!

- Four themes:
  - Economic growth
  - Land conservation
  - Air and water thresholds
  - Human development

Consultation with Albertans will help us draft a regional plan.

Thank you