Regulatory Action in Alberta's Oil Sands

Energy Resources Conservation Board - Washington, D.C.

May 2011

ERCB Energy Resources Conservation Board

Energy Supply

Canada is the largest supplier of crude oil to the U.S.

- Oil sands production a growing contribution to North American energy supply and security

Alberta's Location

Anchorage
2277 km
(1415 miles)

Vancouver
817 km *(507 miles)*

Ottawa
2847km *(1769 miles)*

New York City
3270 km *(2032 miles)*

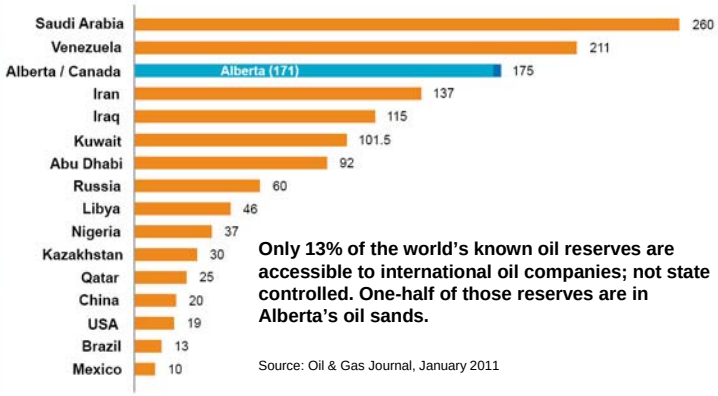
Houston
3018 km *(1876 miles)*

Mexico City
3973 km *(2469 miles)*

Alberta covers
661 190 km^2
(255 285 miles^2),
an area comparable to Texas.

World oil reserves

(billions of barrels - established)



Only 13% of the world's known oil reserves are accessible to international oil companies; not state controlled. One-half of those reserves are in Alberta's oil sands.

Source: Oil & Gas Journal, January 2011

Where are the Oil Sands?

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The Alberta Context

Albertans own the resource

Alberta Government

- Grants tenure
- Sets and collects royalties

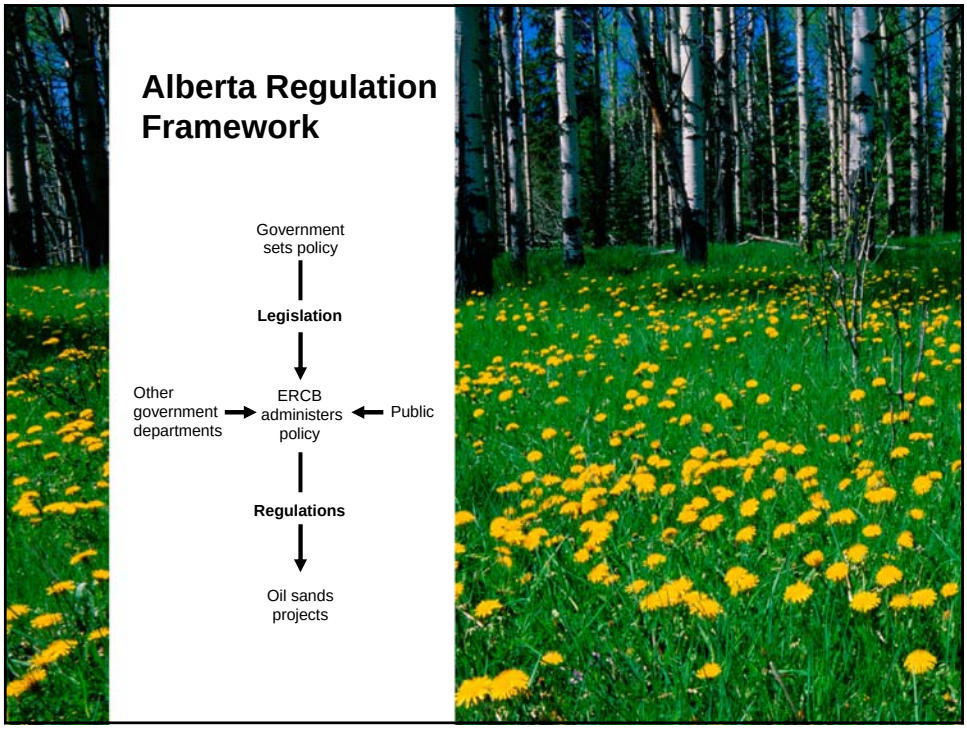
Tenure is an opportunity, not a right

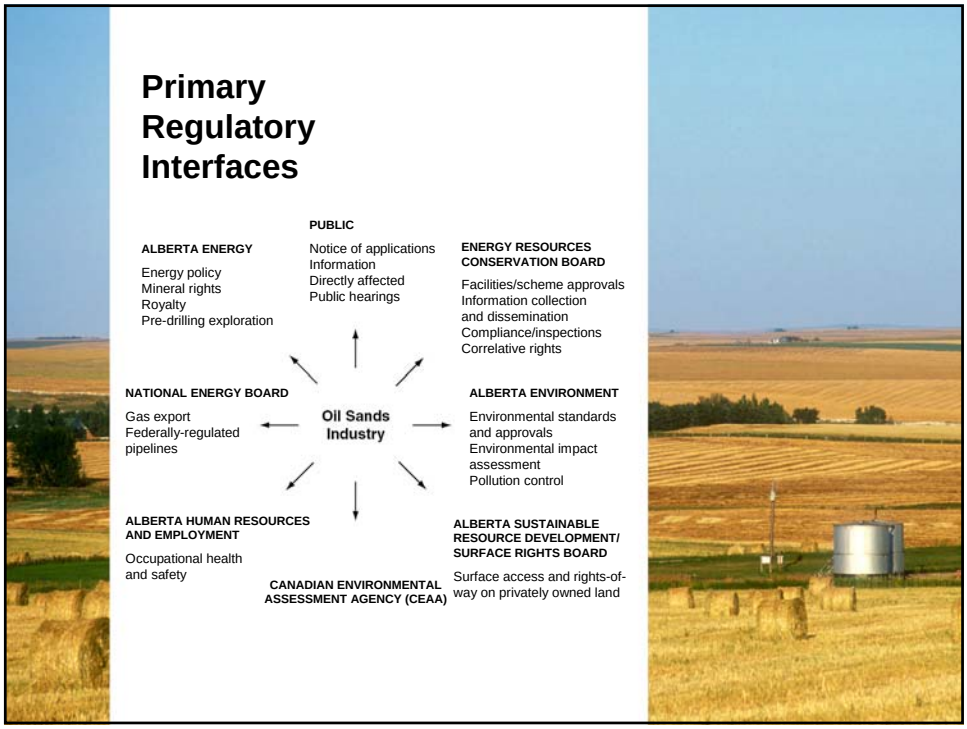
Alberta's Values

Oil sands regulation is governed by legislation that captures the following values

The public interest balancing

- Environmental, including cumulative impacts
- Social
- Economic


Alberta Regulation Framework
Government sets policy
Legislation
Other government departments
ERCB administers policy
Public
Regulations
Oil sands projects


Primary Regulatory Interfaces
PUBLIC
Notice of applications
Information
Directly affected
Public hearings
ALBERTA ENERGY
Energy policy
Mineral rights
Royalty
Pre-drilling exploration
ENERGY RESOURCES CONSERVATION BOARD
Facilities/scheme approvals
Information collection and dissemination
Compliance/inspections
Correlative rights
NATIONAL ENERGY BOARD
Gas export
Federally-regulated pipelines
Oil Sands Industry
ALBERTA ENVIRONMENT
Environmental standards and approvals
Environmental impact assessment
Pollution control
ALBERTA HUMAN RESOURCES AND EMPLOYMENT
Occupational health and safety
ALBERTA SUSTAINABLE RESOURCE DEVELOPMENT/ SURFACE RIGHTS BOARD
Surface access and rights-of-way on privately owned land
CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY (CEAA)

The ERCB

The ERCB's mission is to ensure development is safe, fair, responsible and in the public interest

- 70+ years of regulatory heritage
- Independent decision maker
- Technical experts
- 9 Board Members and 900+ staff (about 100 focused on oil sands development)

Energy Regulated Facilities

Producing Oil & Gas Wells	176 166*
ERCB Regulated Pipelines	394 000 km
Gas Processing Plants	955 (633 sweet gas, 292 sour gas)
Oil Sands	61 in situ**, 8 surface mines 154 primary recovery projects 20 experimental projects
Upgraders	5 facilities (240 360 m^3 per day capacity)
Coal Mines	12 plants (Annual production: 32.2 M*t*)

* Producing wells: 9709 bitumen, 35 484 conventional oil, 116 603 gas, 14 120 CBM and 250 shale.
** As of January 2011

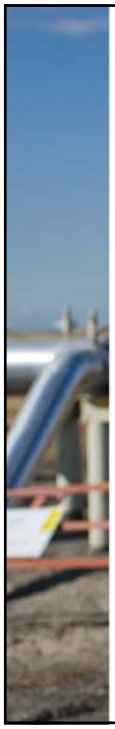

P&H


Photo credit: Cenovus Energy Inc.

Rigorous and Transparent Regulation: Application Process

No oil sands project may proceed without

- Meaningful consultation
- A project application, including an EIA and assessment of cumulative effects
- A complete review by expert ERCB staff
- On complex or contentious projects, a formal hearing
- A formal approval document

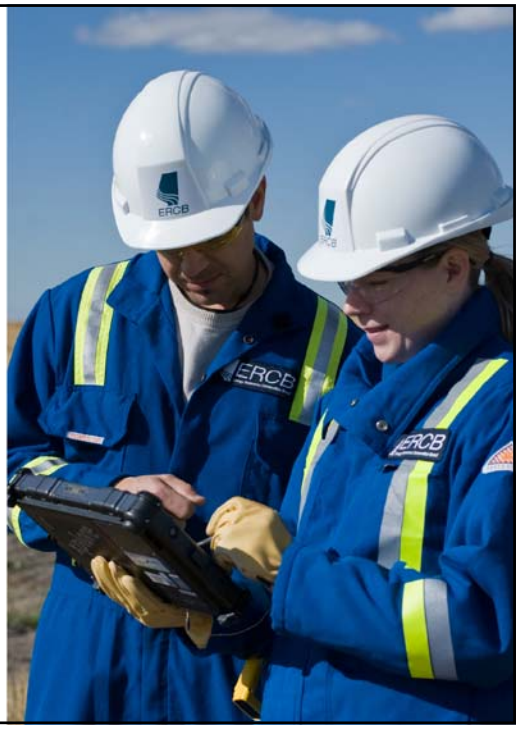


Rigorous and Transparent Regulation: Ongoing Surveillance

Ensure compliance with regulations

- Teams of inspectors, including professional engineering and environmental staff
- About 120 inspections of oil sands mines in 2010, typically lasting several days
- Conducted more than 10 000 inspections of in situ facilities since 2007

Take action when noncompliance found



Compliance Across Alberta

Compliance with major ERCB regulations was 98.6% in 2009

Full disclosure: monthly public compliance summary

Action against noncompliance

- Shut down 177 facilities in 2009: financial penalty plus immediately mitigates impact
- Operator must show that it won't happen again: compliance plans are audited
- Global refer status
- Coordinate with other government departments

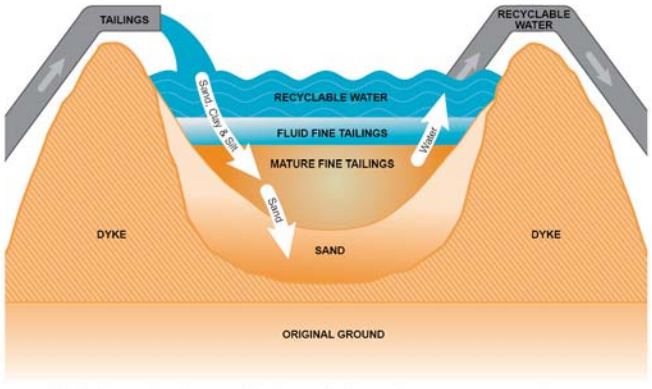
Government Action

- Prosecutions, fines, creative sentences

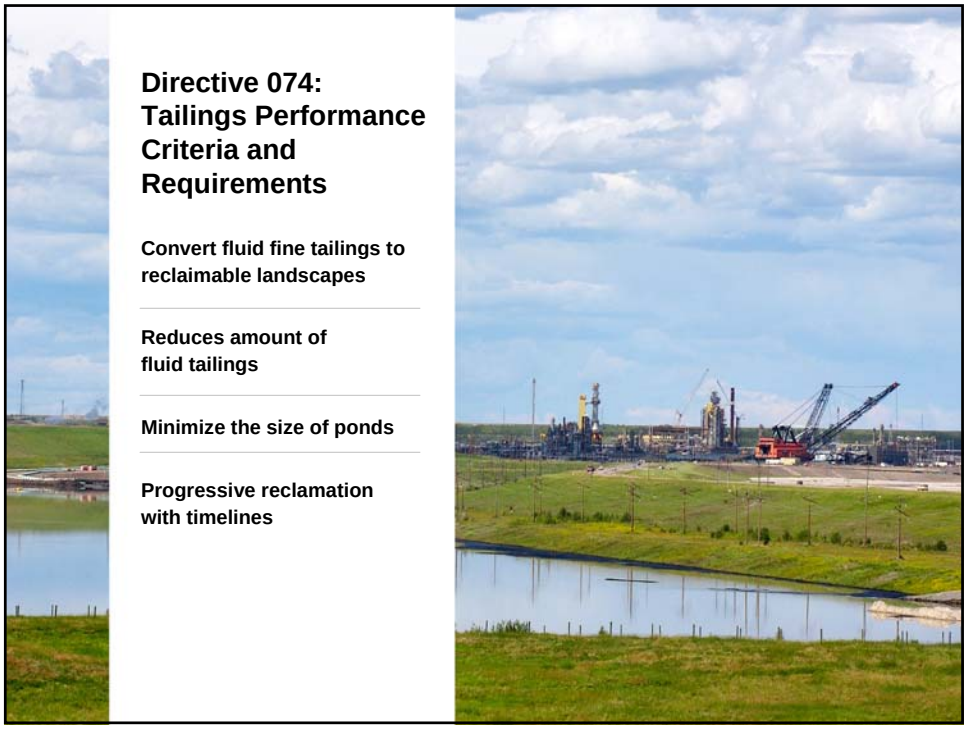
Mitigating Impacts of Industrial Activity

What regulation is about

Management of Tailings Ponds



Ponds have extensive groundwater monitoring and seepage capture systems



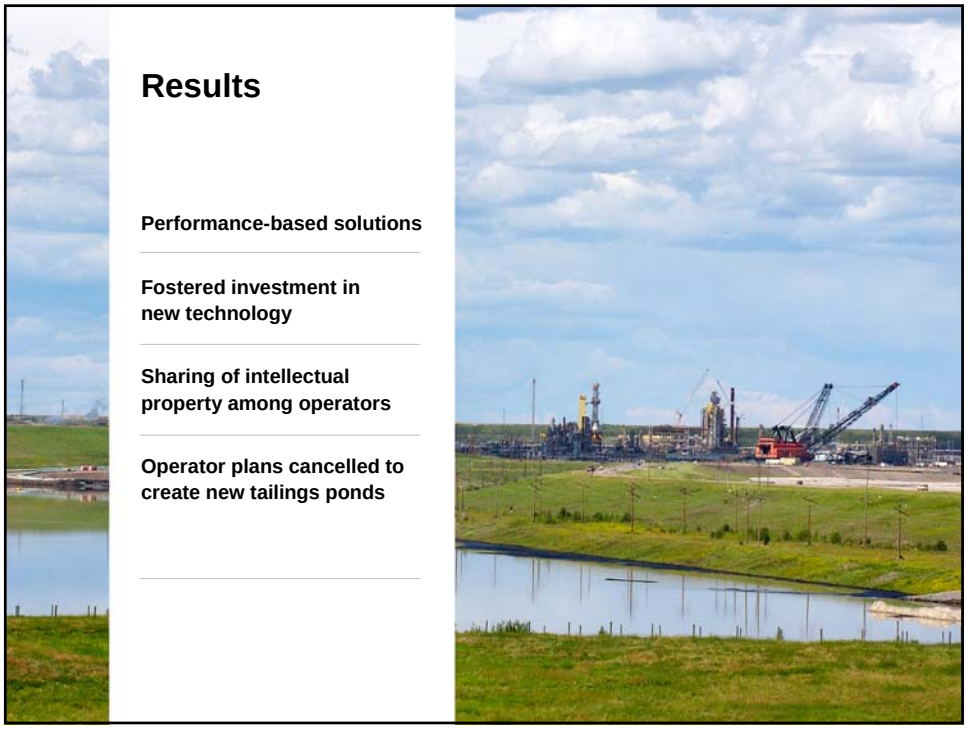
Directive 074: Tailings Performance Criteria and Requirements

Convert fluid fine tailings to reclaimable landscapes

Reduces amount of fluid tailings

Minimize the size of ponds

Progressive reclamation with timelines



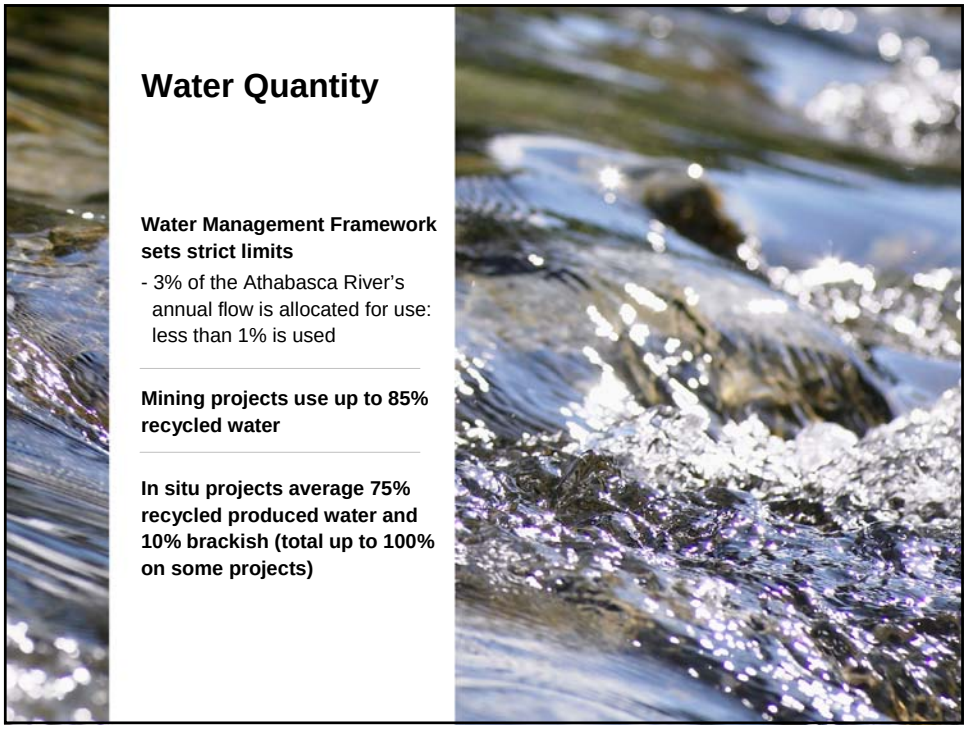
Results

Performance-based solutions

Fostered investment in new technology

Sharing of intellectual property among operators

Operator plans cancelled to create new tailings ponds



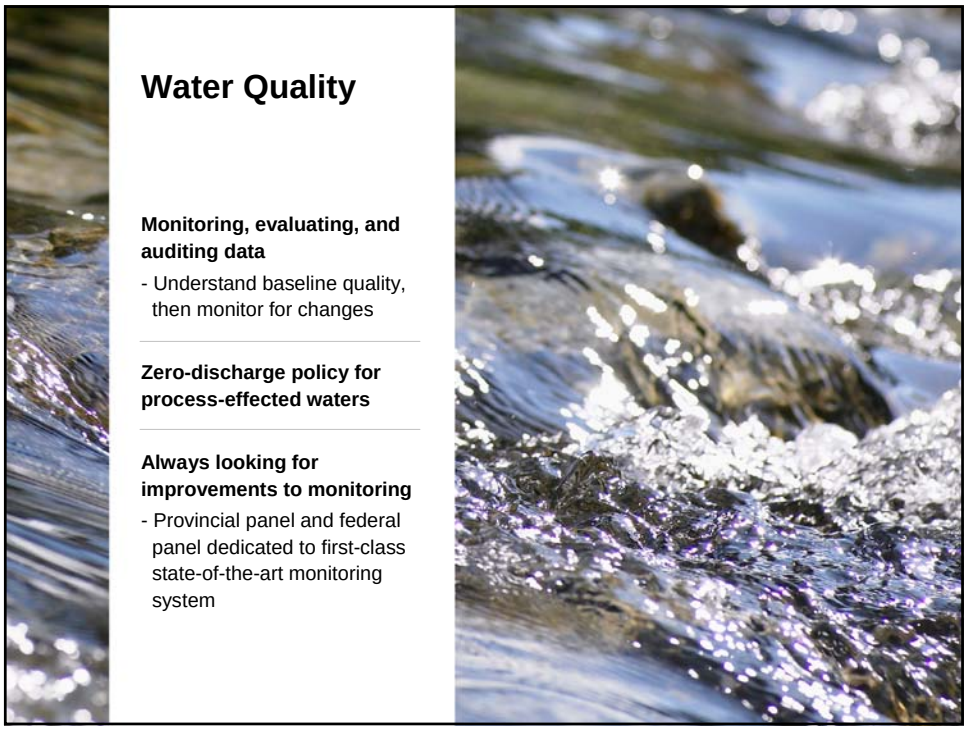
Water Quantity

Water Management Framework sets strict limits

- 3% of the Athabasca River's annual flow is allocated for use: less than 1% is used

Mining projects use up to 85% recycled water

In situ projects average 75% recycled produced water and 10% brackish (total up to 100% on some projects)



Water Quality

Monitoring, evaluating, and auditing data

- Understand baseline quality, then monitor for changes

Zero-discharge policy for process-effected waters

Always looking for improvements to monitoring

- Provincial panel and federal panel dedicated to first-class state-of-the-art monitoring system

Groundwater

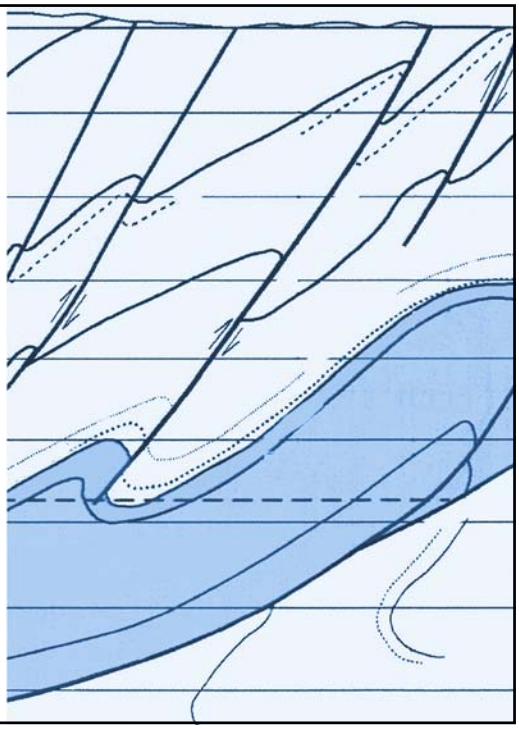
Groundwater mapping

Regulations that safeguard groundwater

Understand the specific project

- How will it be operated
- Ensure understanding of geology
- Place constraints if necessary

Monitoring



Air

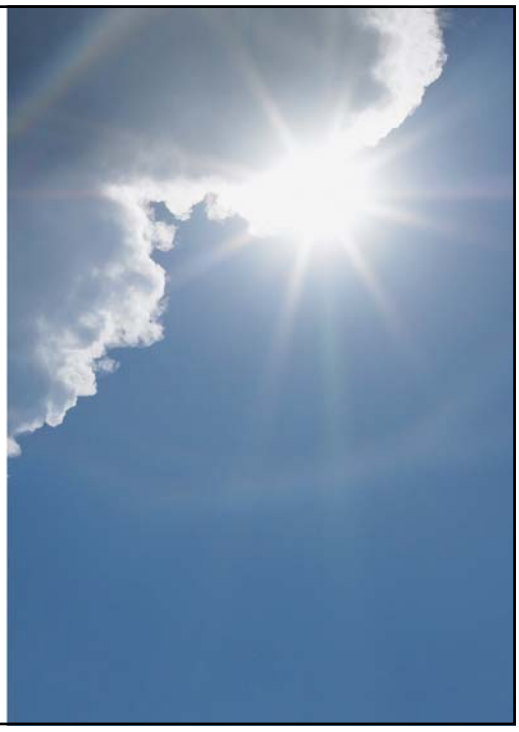
Alberta is protecting clean air, not reversing contamination

Environmental Protection and Enhancement Act specifies ambient air quality guidelines

Most heavily monitored air shed in the world

- Network of continuous monitoring stations operated 24/7
- Collaboration of communities, ENGOs, industry, government and Aboriginal stakeholders
- Fully accessible and real time

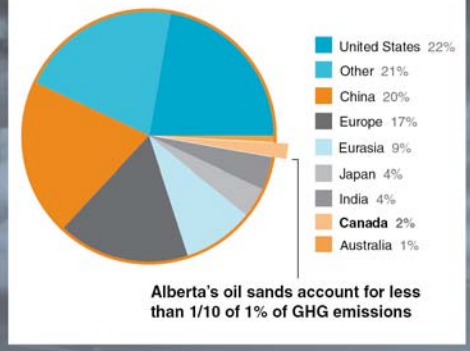
Air quality rated good (highest rating) 98% of the time



Greenhouse Gas Context

Canada is responsible for 2% of the world's GHG emissions

- Oil sands is responsible for 0.1% of global emissions



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

Action on Greenhouse Gases

Alberta is first jurisdiction in North America to regulate large industrial GHG emissions

Legislative framework for Carbon Capture and Storage

$2 billion in public funds for large-scale CCS projects

Canada's Federal Government working on solutions

Progressive Reclamation

Alberta is looking at all aspects of reclamation

- Required by law in Alberta
- Financial security program

Life expectancy of a mine can be 40+ years

- Must have progressive reclamation

Reclamation certification requires that the land be deemed as productive as before mined.

- Liability transfers back to the province


Photo credit: Suncor Energy Inc.


Photo credit: Suncor Energy Inc.

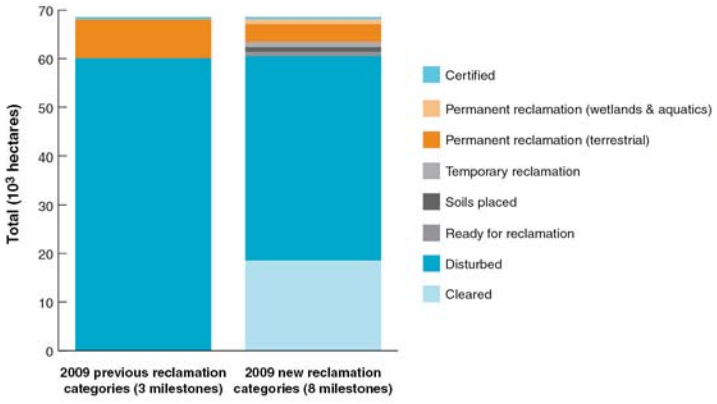
Reclamation

About 26 square miles of disturbed land is reclaimed or under active reclamation

More than 7.5 million tree seedlings planted in reclamation efforts

Almost half of Alberta's coal mines have been reclaimed – the remainder are active

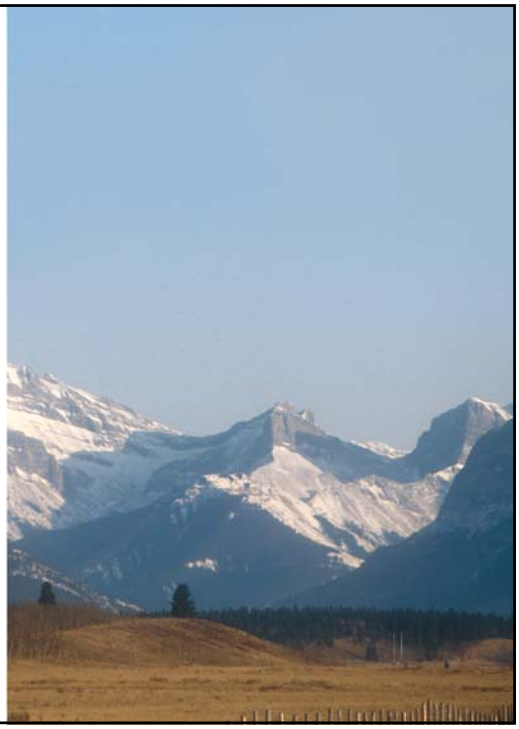
Status of All Disturbed Land in Oil Sands Mining



Cumulative Impacts

Science-based decisions

- Predict impacts and cumulative effects of a proposed activity
- Follow-up monitoring to validate predictions
- Actions could include:
  - Apply conditions to project approval
  - Create new ecological areas to compensate
  - Mandate additional technology during project operation



Draft Lower Athabasca Regional Plan

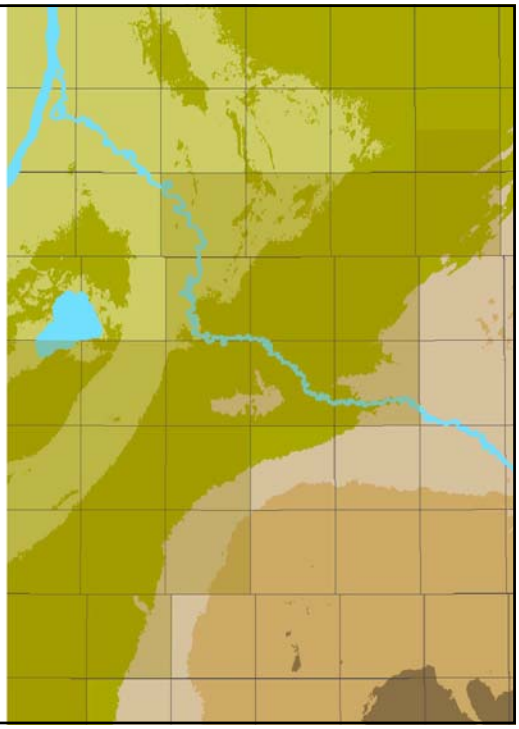
Manages cumulative effects

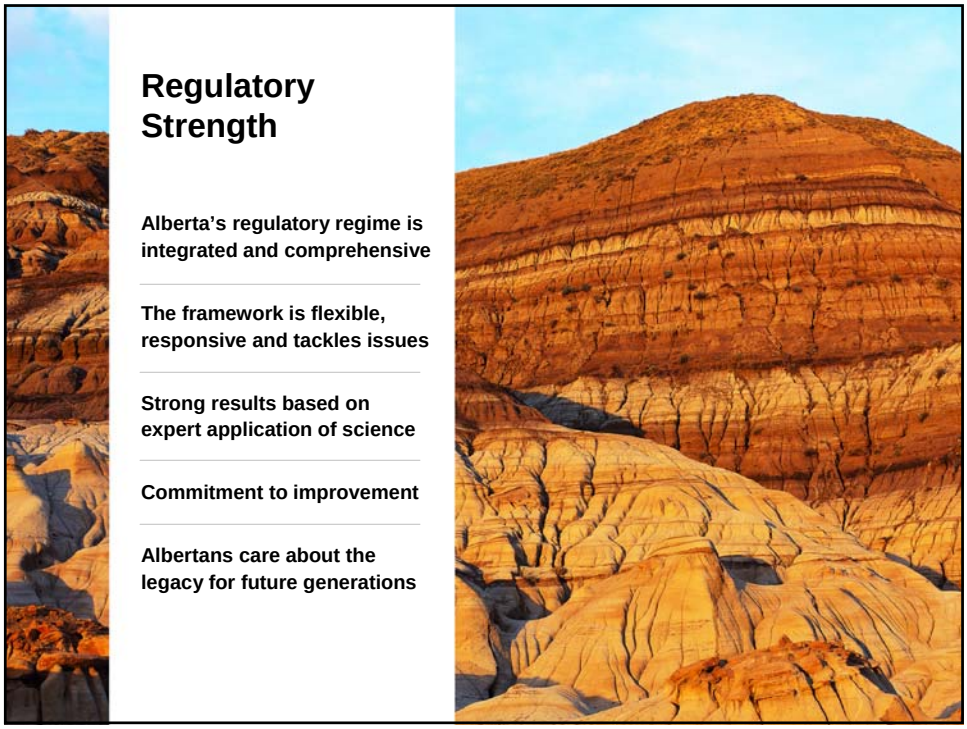
Conserves more than 7700 square miles of habitat for native species

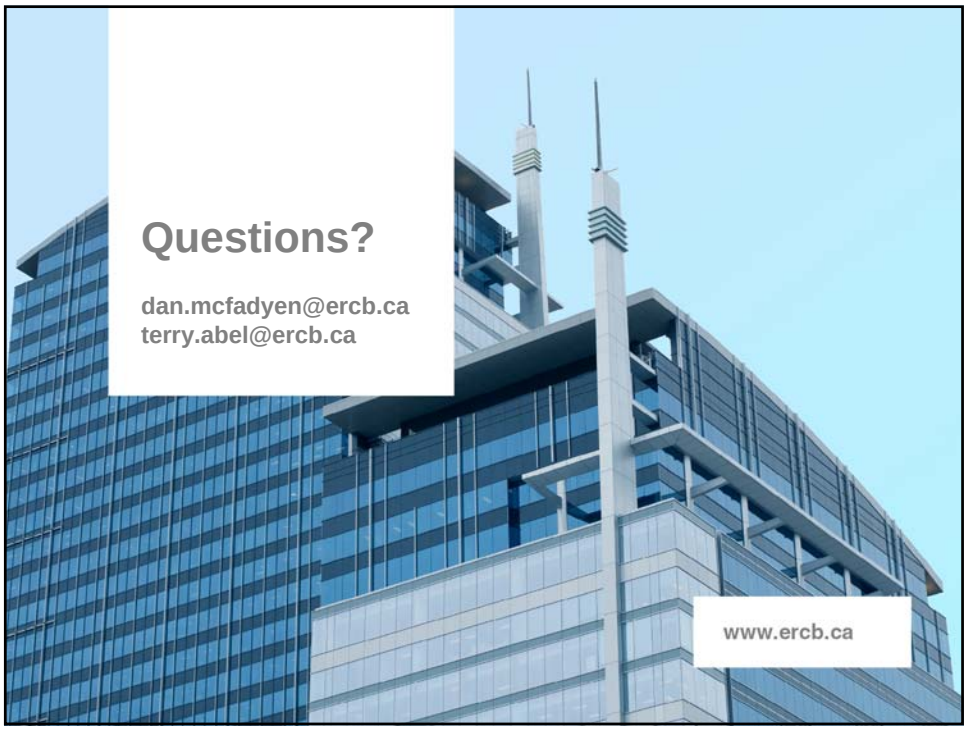
Strict science-based environmental limits for air, land, disturbance and water

Triggers to signal where proactive efforts are needed to avoid reaching limits

Developed with input from stakeholders including public, local government, and First Nations




Regulatory Strength
Alberta's regulatory regime is integrated and comprehensive
The framework is flexible, responsive and tackles issues
Strong results based on expert application of science
Commitment to improvement
Albertans care about the legacy for future generations


Questions?
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