



**ICCL**  
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# Survey of the future Quebec Soil Protection & Contaminated Sites Rehabilitation Policy & How It Plans To Integrate Site Cleanup And Reuse Strategy

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# CANADA AND QUEBEC

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- ◆ Canada : 9, 984 670 km<sup>2</sup>
- ◆ Europe : 10, 392 855 km<sup>2</sup>
  
- ◆ Quebec : 1 542 000 km<sup>2</sup>
  
- ◆ France : 543 965 km<sup>2</sup>
- ◆ Texas : 696 241 km<sup>2</sup>
- ◆ Californie : 423 970 km<sup>2</sup>

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# HISTORICAL REMINDER

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- ◆ 1988 : CONTAMINATED LAND REHABILITATION POLICY
- ◆ 1998 : SOIL PROTECTION AND CONTAMINATED LAND REHABILITATION POLICY
- ◆ 2011-2012 : UPCOMING NEW POLICY

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# HISTORICAL REMINDER

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- ◆ The 1998 Policy last chapter indicates the future developments (10) envisioned by the government to materialize the Policy. Among them :
  - Regulation;
  - An «Experts» (private consultants) system to help control assessment quality, rehabilitation, land title inscription, etc;
  - Pricing some governmental administrative acts;
  - Economical tools (grants program);
  - Specific risk assessment guidelines and mechanism;
  - Generic criteria validation
  - Technical guidelines

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# 1998 SOIL POLICY

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- ◆ Since 1998, all developments foreseen in the Policy took place;
- ◆ Meanwhile, new concerns appeared or became more important over the last years (sustainable development, climate change, cities densification, beneficial use, etc );
- ◆ Thus, the 1998 Policy is obsolete and must give way to a new, updated version which will:
  - Reflect the ways Quebec deals with its contaminated soils now;
  - Provide the new direction and indicate the anticipated development

# THE NEW SOIL POLICY

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## ◆ 4 «documents» instead of one :

- 1. The Policy (+action plan) : philosophy and what we intend to develop in the future
- 2. Guidelines 1 : How someone must actually proceed when facing different concrete usual situation (on line/updated)
- 3. Guidelines 2 : What has actually to be done in some specific situation (groundwater contamination, sediments, agricultural land, urban infrastructure, parks and northern territories, gas stations) + tools (criteria, risk assessment ,etc) (on line/updated).
- 4 Technical fact sheets : very specific elements which often need an elaborated description (on line/updated)

# THE NEW SOIL POLICY

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## 3 goals / 8 intervention strategies / 35 actions

1. Protect the environment and public health
  - Prevent new contamination
  - Limit the propagation of existing contamination
2. Rehabilitate the contaminated sites to revitalize the territory in a durable way
  - Revitalize the land
  - Promote sustainable rehabilitation
3. Inform and involve the concerned actors

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# GOAL 2 : REHABILITATE THE CONTAMINATED SITES TO REVITALIZE THE TERRITORY IN A DURABLE WAY

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## FOUR STRATEGIES

- ◆ Strategy 1 : Assess the current «environmental liabilities»
- ◆ Strategy 2 : Promote the sustainable development of the land
- ◆ Strategy 3 : Foster the use of sustainable remediation techniques
- ◆ Strategy 4 : Foster the beneficial reuse of excavated contaminated soils

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# STRATEGIES 1 AND 2

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- ◆ Strategy 1 : Assess the current «environmental liabilities»
  - A 1 : Active industries operating in decreed sector of industrial activities must assess their land (pulp and paper, mines and metallurgy, aluminum plants, etc) (PRRI program)
  - A 2 : Dry cleaners
  - A 3 : Mapping of actual and former industrial lands
  - A 4 : List the Quebec governmental liabilities
  
- ◆ Strategy 2 : Promote the sustainable development of the land
  - A 5 : Rehabilitate and reuse governments contaminated sites
  - A 6 : Put in place economical incentive programs (municipalities + private)
  - A 7 : Force the gas stations owners to assess and cleanup when closing or changing their tanks
  - A 8 : Put in place a mechanism to finance the cleanup of abandoned gas-stations
  - A9 : Voluntary agreements with multisites owners

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## STRATEGY 1 :

# Assess the current environmental liabilities

### A4: List the Quebec governmental liability

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- ◆ 2006 : New accounting rules for establishing an accurate financial statement command to assess and include the number of contaminated sites for which the government is liable as well as their estimated rehabilitation cost.
- ◆ 2007 : Each ministry must produce its own listing (an associated rehabilitation cost) : total inscriptions and estimated rehabilitation cost will appear as «Environmental Liabilities» under the state budget's «National Debt» column.
- ◆ Actual registered «Environmental Liabilities» (March 31 2010) :
  - 1 744 inscriptions
  - Estimated rehabilitation cost : 1 billion 776 millions \$

## STRATEGY 2 :

# Promote the sustainable development of the land

## A5 : Rehabilitate and reuse government's contaminated sites

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- ◆ Each ministry must provide a yearly action plan;
- ◆ Treasury Board are financing the ministries to asses/rehabilitate (the new accounting system made this much easier);
- ◆ Goals are to reduce governmental environmental liabilities + foster the rehabilitated sites reuse;
- ◆ By doing so, ministries should apply the most sustainable rehabilitation techniques and foster their implementation

# Strategy 2 : Promote the sustainable development of the land

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## ◆ Strategy 2 : Promote the sustainable development of the land

- A5 : Rehabilitate and reuse governments contaminated sites
- A6 : Put in place economic incentive programs (municipalities + private)
- A7 : Force the gas stations owners to assess and cleanup when closing or changing their tanks
- A8 : Put in place a mechanism to finance the cleanup of abandoned gas-stations
- A9 : Voluntary rehabilitation agreements with multisites owners

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# Sustainable development of the land?

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- ◆ Aim to develop where the city and infrastructure already exist(ed) :
- ◆ Restorative development concept :

«A mode of development that increases the health or value of existing assets without (or with minimal) destruction of other assets, and without significantly increasing the restored assets' geographic or ecological footprint»

Storm Cunningham 2001

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# Strategy 2 : Promote the sustainable development of the land

## A6 : Put in place economic incentive program

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- ◆ 1998-2005 : Revi-Sols program (municipalities/private)
  - Governmental Grants (113.5 millions\$) (50/70%)
  - Development project on a urban contaminated site (305)
  - Redeveloped surface : >3 millions m<sup>2</sup>
  - Yearly municipal taxes generated on rehabilitated land : 94,6 M \$
  
- 2007-2015 : Climat Sol program
  - Governmental Grants (60 millions\$) (30/50%)
  - Development project on urban contaminated sites (152 to date)
  - + climate related aspects (greening + better insulation)
  
- ◆ From revitalizing single contaminated sites to creating whole new neighborhoods out of contaminated land

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# Strategy 3 : Foster the use of sustainable remediation techniques

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- ◆ Strategy 3 : Foster the use of sustainable remediation techniques

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# Sustainable rehabilitation?

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- ◆ To be deemed sustainable, the rehabilitation should :
  - Reduce the environmental liabilities (the amount of free contaminants found in the soils and groundwater) ;
  - Minimize its environmental footprint;
  - Maximize the beneficial reuse of the excavated (eventually treated) contaminated soil.

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# Sustainable rehabilitation?

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1. In situ treatment ;
2. On site treatment + on site beneficial reuse ;
3. On site treatment + off site beneficial reuse;
4. Off site treatment + beneficial reuse ;
5. On site treatment + land filling;
6. Off site treatment + land filling ;
7. On site management of contamination (risk assessment)
8. Excavation + land filling

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# Strategy 3 : Foster the use of sustainable remediation techniques

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- ◆ Strategy 3 : Foster the use of sustainable remediation techniques
  - A2 : Governmental list of in situ technologies and companies on ministry Internet site;
  - A3 : Incentive economical program for developing green technologies (Env. + Industries);
  - A4 : Determine when rehabilitation become impracticable (technically and economically);
  - A5 : Reduce the contamination level at which excavated soils must be treated before being landfilled;
  - A6 : Introduce fees for landfilling contaminated soils.

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# Strategy 4 : Foster the beneficial use of excavated contaminated soils

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## ◆ A7 : New regulation to offer more beneficial use options

It must come with :

- Mechanisms allowing the control of soils movement and disposal;
- Ways to acknowledge future liabilities and remember where the reused soil are.

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## Strategy 4 :

### Foster the beneficial reuse of excavated contaminated soils

#### A7 : New regulation to offer more beneficial use options

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- ◆ A soil is not a waste and, even if it is contaminated, it can never become a waste (this concept is already integrated into the legislation)

Contaminated soil  $\neq$  (hazardous) waste

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# THE NEW SOIL POLICY

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- ◆ The Policy should be submitted for consultation to external stakeholders this fall.

THANK YOU!

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