

## **Environmental Liability and Contaminated Site Management in Saskatchewan\***

Victor Chang, Saskatchewan Environment and Resource Management

In response to recommendations made by the Contaminated Sites Liability Advisory Group (CSLAG) regarding the management of contaminated sites in Saskatchewan, Saskatchewan Environment and Resource Management (SERM) has, as a first step towards meeting the CSLAG objectives, developed a strategic approach as described in a paper entitled "Environmental Liability and Contaminated Site Management - A Strategic Approach". The paper was prepared based on CSLAG principles and was developed within the existing legislative framework. The strategic approach explains the current situation surrounding environmental liability and contaminated site management, provides a snapshot of current policy/legislation and is to be used as a basis for any required policy or legislative changes.

The strategic approach released on October 23, 1998 was prepared to clarify SERM's policy and incorporate principles and recommendations from the "Report of the Minister's Advisory Group on Contaminated Site Liability in Saskatchewan" that was received by the Minister in May 1997. The proposed process outlined by the strategic approach should be viewed as a significant step towards a fair, efficient and practical system for dealing with complexities involved in contaminated site management.

Uncertainty regarding environmental liability has been a concern during the 1990's. During cleanup of contaminated sites, there is always the issue of "how clean is clean", "who is responsible" and "how much liability they must bear". This uncertainty has placed a barrier to redevelopment of properties, especially when property changes hands. Financial institutions are reluctant to release funds, and purchasers and local municipalities have been wary of becoming involved in potentially contaminated sites. The Canadian Council of Ministers of Environment (CCME) endorsed a set of principles in 1993 to facilitate the development of provincial models and legislation for contaminated site liability. The CCME principles included the concepts of: polluter pays; fairness; openness, accessibility and participation; beneficiary pays; and sustainable development.

CSLAG was appointed in early 1996 and consisted of members from government, non-government organizations, the Saskatchewan Association of Rural Municipalities, the Saskatchewan Urban Municipalities Association (SUMA), industry, the Canadian Bar Association, the Canadian Federation of Independent Business and the financial sector. The CSLAG report made recommendations based on the application of CCME principles

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in Saskatchewan, the identification of contaminated sites, cleanup requirements and responsibility for liability relating to site cleanup. SERM is attempting to meet the objectives of CSLAG's report by working within the existing legislative framework and enhancing and clarifying existing policies. The strategic approach lays out a framework for identifying, allocating responsibility and cleaning up contaminated sites and is intended to provide clarity on the issue of environmental liability and contaminated sites.

The CSLAG report recommended the development of a risk based cleanup guidelines with fault based apportionment for liability and orphan site funding. This strategic approach has adopted the ideas of risk based guidelines and orphan site funding but utilizes voluntary instead of fault based apportionment of liability. Policy and legislation currently in place supports risk based guideline development and voluntary apportionment of liability. Implementation of fault based apportionment of liability, as recommended by CSLAG, would require major legislative change and could result in a more complicated system than required. Similar to the approach recommended by CSLAG, a five step contaminated site management process is defined by the strategic approach for the determination of cleanup procedures, liability and responsibility. The five steps are site identification; identification and notification of potentially responsible parties; allocation of liability (voluntary or directed); remediation planning; and site clean-up and sign-off.

The strategic approach will be monitored, as part of an incremental process, to point the way to any future changes in the approach, policy or legislation. SERM is monitoring how well the model addresses concerns surrounding environmental liability and contaminated site management. Comments and reactions will be taken into account during SERM's impending comprehensive review of environmental protection legislation.

Contaminated sites without responsible parties are known as orphan sites. In support of this strategy, SERM is also attempting to address the issue of orphan sites. SERM's policy has a pollution prevention focus and actions through existing licensing processes, environmental assessment processes, legislation such as *The Hazardous Substances and Waste Dangerous Goods Regulations* and *The Mineral Industry Environmental Protection Regulations* will assist in preventing creation of additional orphan sites. SERM recognizes that existing orphan sites will continue to be identified. SERM is exploring the applicability of sector funds or alternatives for addressing the issue of orphan sites, such as in the downstream petroleum sector.

The strategy also highlights who would NOT be held responsible for cleanup, such as innocent purchasers and municipalities if they did not cause the contamination. Recent litigation (*Busse Farms Ltd v. Federal Business Development Bank*) has provided further insight in the area of potentially responsible parties. Clarification in the area of potentially responsible parties allows purchasers, financial institutions and municipalities to feel

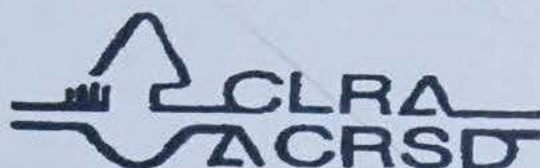
more at ease when dealing with contaminated sites. Parties that did not cause or contribute to the contamination are not held responsible for cleanup. As a result of this strategic approach, municipalities, such as the City of Moose Jaw have begun looking at approaches to dealing with properties under their jurisdictions.

Comments received regarding the overall process have been positive. The strategy provides clarity surrounding the contaminated site management process in Saskatchewan for government officials, industry personnel, law professionals, financial officers and the general public.

Environmental Liability and Contaminated Site Management-A Strategic approach is posted at <http://www.serm.gov.sk.ca/protection/liability>

# Perspectives in Land Reclamation and Restoration

Presented by:



Canadian Land Reclamation Association/  
Association Canadienne De Réhabilitation Des Sites Dégradés



Including the Canadian Land Reclamation Association's  
24<sup>th</sup> Annual Meeting

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**10:30 – 12:10 Concurrent Sessions**

**Session A:**

**Remediation** – Saskatchewan Room ‘A’

Session Chair: Darlene Howat – Department of Renewable Resources, University of Alberta

- 10:30 – 10:50 Bioremedial options.  
Allan Jobson, StanTec..... 46
- 10:50 – 11:10 In-situ biodegradation of ethanol-amine in low permeability soils.  
Stuart Lunn and Ron Goodman, Esso..... 48
- 11:10 – 11:30 Yield and nutrient uptake of wheat on oil well sites: effects of topsoil depth and organic amendments  
Akinremi, O.O., Lethbridge Research Centre; F.J. Larney, Semi-Arid Prairie Agriculture Research Station; R.L. Lemke, Semi-Arid Prairie Agriculture Research Station; and V. Klaassen, PanCanadian Petroleum Ltd..... 161
- 11:30 – 11:50 Investigation of microbial bioremediation in a gold mill tailings pond.  
Carl Paton, Cameco Corporation and Ram D. Mehta, Prairie Biological Research Ltd. .... 71
- 11:50 – 12:10 Use of crop selection and cattle manure to bioremediate a heavy oil-polluted loamy sand for grain production.  
Bix Biederbeck, Agriculture and Agri-Food Canada..... 82
- Session B:**
- Revegetation and the ESSA** – Saskatchewan Room ‘C’
- Session Chair: Suzanne Gill – Alberta Agriculture, Food, and Rural Development, Public Lands Branch
- 10:30 – 10:50 Native prairie revegetation on wellsites in southeastern Alberta.  
Etienne Soloudre and M. Anne Naeth, and Andy Hammermeister, University of Alberta..... 106
- 10:50 – 11:10 Vegetation characteristics on a pipeline right-of-way twelve years after construction in Southern Alberta.  
Kelly Ostermann, University of Alberta ..... 109
- 11:10 – 11:30 Bioengineering and reclamation to stabilize a lakeshore slope.  
Jim Schaefer, University of Alberta..... 112
- 11:30 – 11:50 Restoration based on ecological function: grazing management in an endangered Australian ecosystem.  
Kim Allcock, David Board, David Hik, Alan Newsome, Roger Pech CSIRO Wildlife and Ecology, Australia, and University of Alberta..... 146
- 11:50 – 12:10 Employment Futures: What does Environmental Science Student Association have to offer?  
Margaret Wilson, University of Saskatchewan..... 157

12:10 – 1:45      **Lunch** -- Saskatchewan Room 'B'

1:45 – 3:25      **Concurrent Sessions**

**Session C:      Native Plants and Revegetation** – Saskatchewan Room 'A'  
Session Chair: Anne Naeth – Department of Renewable  
Resources, University of Alberta

1:45 - 2:05      Relative performance of native prairie grasses and forbs for  
revegetation of a pipeline disturbance on native prairie.  
David Walker, Walker and Associates..... 126

2:05 – 2:25      Revegetation of wellsite disturbances on Fescue Prairie in east-  
central Alberta.  
Jay Woosaree, Alberta Research Council..... 118

2:25 – 2:45      The evolving native plant industry in Saskatchewan.  
Nora Stewart and Andy Hammermeister, Native Plant  
Society of Saskatchewan..... 115

2:45 – 3:05      Cameco, Key Lake greening project, in harmony with nature -  
(1978-1999 & beyond).  
Lotfi Haji, Cameco..... n/a

3:05 – 3:25      Rare Plant Rescue During Pipeline Construction (*Erigeron*  
*compositus* Pursh. var. *glabratus* Macoun, Fern-leaf Fleabane on  
the 1998 Foothills Pipe Lines Expansion Project.)  
David Walker, Walker and Associates..... n/a

**Session D:      Soils and Restoration**– Saskatchewan Room 'C'  
Session Chair: Mike Solohub – Department of Soil Science,  
University of Saskatchewan

1:45 - 2:05      Soil information resources for the prairies.  
Alvin Anderson and Glenn Padbury, Agriculture and  
Agri-Food Canada ..... n/a

2:05 – 2:25      Setting reclamation standards: When is soil decompacted?  
Richard Johnson, Alberta Research Council..... 175

2:25 – 2:45      Using oily waste to restore productivity in a severely eroded  
loamy sand.  
M.C.P. Jarvis<sup>1,3</sup>, V.O. Biederbeck<sup>2</sup>, K.G. Hanson<sup>2</sup>, T.A.  
Fonstad<sup>3</sup> ;<sup>1</sup> Imperial Oil Resources, <sup>2</sup> Semiarid Prairie  
Agricultural Center, and <sup>3</sup>, University of Saskatchewan ..... 68

2:45 – 3:05      Remediation of potash slime tails through use of cross-linked  
polyacrylamide hydrogel.  
Kathleen Cameron, University of Saskatchewan..... 169

3:05 – 3:25      Fifteen years of subsoil/mine spoil development on a

reconstructed profile.

Danielle Bailey and Donald Pluth, University of Alberta..... 174

**3:25 – 4:00 Refreshments**

**4:00 CLRA National Annual General Meeting – Sask. Room ‘C’**

**5:30 – 6:30 Cocktail Hour – Saskatchewan Room ‘B’**

**6:30 Banquet and Awards – Saskatchewan Room ‘B’**

Awards

Banquet Presentation: New forms of work organization in the Canadian mining industry.

Dr. Bob Russell, Department of Sociology, University of Saskatchewan ..... n/a

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**Thursday, September 30th**

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**8:10 - 8:15 Announcements**

**8:15 - 10:00 Alberta Policy – Saskatchewan Room ‘B’**  
Session Chair: Steven Deugau – Knox Resources Inc.

8:15 - 8:35 Development and status of reclamation certification criteria in Alberta.  
Chris Powter, Alberta Environmental Protection..... 18

8:35 - 8:55 Pipeline reclamation certification standards - a capability assessment approach.  
Al Fedkenheuer, TransCanada Transmission Ltd..... 24

8:55 - 9:15 Alberta's new native plant guidelines.  
Heather Gerling, Alta. Agric. Food and Rural Dev. .... 31

9:15 - 9:35 Alberta's orphan well program.  
Pat Foo, Alberta Energy and Utilities Board ..... 39

9:35 – 9:55 Qualified reclamation practitioners in Alberta.  
David Lloyd, Alberta Environmental Protection ..... 40

**9:55 – 10:30 Refreshments**

**10:30 – 12:00 Focus Sessions (Plenary) – Saskatchewan Room ‘B’**  
Session Chair: Kerby Loewen – Prairie Seeds Inc.

10:30 – 11:15 1)The Great Sandhills  
Planning and development authority for Saskatchewan Rural Municipalities and planning districts.  
Ralph Leibel, Saskatchewan Municipal Government..... 128

	Use of ecological management planning in Western Saskatchewan Wayne Pepper and Jim Ireland, ERIN Consulting Ltd. ....	136
11:15 – 12:00	2) Focus Session - Legal Considerations in the Environmental Sector Julian Bodnar, Barrister and Solicitor (Stevenson Gillis Hjelte Tangjerd).....	n/a
	Gary Meschishnick, Barristor and Solicitor Wallace Meschishnick Clackson Zawada .....	n/a
12:00 – 1:30	<b>Lunch</b> – Saskatchewan Room ‘A’	
1:30 – 3:10	<b>Concurrent Sessions</b>	
<b>Session A:</b>	<b>Remediation</b> – Saskatchewan Room ‘C’ Session Chair: Lisa Groves – EnviroTest Labs	
1:30 – 1:50	Phytoremediation as an in-situ technique for the restoration of oil-contaminated sites. C.M. Frick, J.J. Germida, and R.E. Farrell, University of Saskatchewan .....	95
1:50 – 2:10	Integration of toxicity testing and chemical analyses for site assessment and remediation. Deib Birkholz, Enviro-Test Laboratories and Stephen Goudey, HydroQual Laboritories Ltd. ....	98
2:10 – 2:30	Evaluating soil amendments for brine spill remediation. Ken Greer, Western Ag. Consulting and Jeff Schoenau, University of Saskatchewan .....	n/a
2:30 – 2:50	Decommissioning and reclamation of an abandoned herbicide plant. Ralph Bock, Saskatchewan Environment and Resource Management .....	n/a
2:50 – 3:10	Surface water management with the Little River Pond Mill. Kathleen Cameron, Sunset Solar Systems Ltd.....	99
<b>Session B:</b>	<b>Ecosystem Restoration</b> – Saskatchewan Room ‘B’ Session Chair: Corinne Tchorzewski – Saskatchewan Environment and Resource Management, Sustainable Land Management Branch	
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1:50 – 2:10	Fire management for Prince Albert National Park - planned and random ignition prescribed burns.	

	Jeff Weir, Prince Albert National Park .....	141
2:10 – 2:30	Ecosystem management applied to riparian and aquatic habitat restoration. Karl Lauten, Saskatchewan Environment and Resource Management .....	144
2:30 – 2:50	Working relationship of SERM and industry in the West Boreal EcoRegion of Saskatchewan. Randy Slater, Saskatchewan Environment and Resource Management; Stan McBride, Wascana; and Shawn Daschuk, NESL .....	n/a
2:50 – 3:10	Composite Tailings (CT) reclamation research & development at Syncrude Canada Limited's oilsands mining operation. Clara Qualizza, Syncrude Canada Ltd. ....	n/a
<b>3:10 – 3:30</b>	<b>Refreshments</b>	
<b>3:30 - 4:40</b>	<b>Social and Forestry Issues – Plenary – Sask. Room ‘B’</b> Session Chair: Sheila Lamont – Saskatchewan Conservation Data Centre	
3:30 – 3:50	Ecosystem based management in El Salvador. Jim Ireland and Wayne Pepper, ERIN Consulting Ltd. ....	154
3:50 – 4:10	Public participation in a multi-stakeholder process. Mark Liskowich, Northern Mines Monitoring Secretariat ....	156
4:10 – 4:30	Innovative regeneration applications to reclaim harvested sites in the boreal forest. Derek Sidders, Canadian Forest Service.....	n/a
4:30 – 4:40	<b>Closing Remarks – Saskatchewan Room ‘B’</b>	