

**APPENDIX J -- HARTLAND LANDFILL PHASE 1 CLOSURE PLAN**

CAPITAL REGIONAL DISTRICT

HARTLAND LANDFILL  
PHASE I CLOSURE PLAN

Part I :  
Design Memorandum  
for Leachate Control

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HARTLAND LANDFILL PHASE I CLOSURE PLAN  
PART I : DESIGN MEMORANDUM FOR LEACHATE CONTROL

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**HARTLAND LANDFILL PHASE I CLOSURE PLAN**  
**PART II**  
**Design Memorandum on the Phase I Closure Plan**

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**EXECUTIVE SUMMARY**

**Background**

The Phase I area of the Capital Regional District's (CRD) Hartland Landfill will be full before the end of 1994. It was therefore necessary that the CRD have a *Closure Plan* prepared for approval by the Ministry of Environment, Lands and Parks (MOELP). The *Hartland Landfill Phase I Closure Plan* was divided into two parts.

**Scope of Part I**

In Part I, *Design Memorandum for Leachate Control*, leachate quantities generated, both at present and in the future, were estimated and design recommendations for an leachate handling system developed. This design memorandum, which includes the construction of a leachate storage lagoon and pump station, is currently being implemented.

**Scope of Part II**

This submission contains Part II, *Design Memorandum on the Phase I Closure Plan*. This document includes design recommendations which meet and exceed the MOELP's *Draft Landfill Criteria for Municipal Solid Waste*. It presents a longterm environmentally safe closure plan meeting the site specific constraints of the Hartland Landfill and ensuring that the generation of leachate is minimized.

The three key issues of this memorandum are the final cover system, a monitoring program and the implementation of the *Closure Plan*.

**Final Cover System**

The design of the final cover system included an independent engineering review of the preliminary design recommendations and discussion and review by CRD staff. The agreed upon final cover system is as follows:

|                 |   |
|-----------------|---|
| Top of Phase I: | Option B1 which has a synthetic membrane overlying a geosynthetic clay liner (GCL). |
| Sloped Areas:   | Option A which has a synthetic membrane overlying a clay layer.                     |
| West Slope:     | A 1 meter hydroseeded clay layer.   |

This system balances performance, longterm reliability and cost effectiveness. The



cost of most reliable option, B1, is offset by additional landfilling space gained (estimated value of \$1,015,000) by using a thinner composite cover. On the sloped surfaces runoff is enhanced, reducing the chance of infiltration through the cover, therefore the lower cost and slightly more permeable Option A was selected.

The West Slope will be covered by Phase II landfilling operations and therefore a reusable lower cost cover can be used. The clay cover material will be stripped once Phase II begins to extend over this area and reused as Phase II cover material.

#### Capital Cost

The overall capital cost of this cover system, including all CRD costs, is approximately \$ 6,684,000.

#### Implementation

Implementation of the *Closure Plan* should be able to proceed with minimal disruption to other operations at the Hartland site. The proposed schedule for closure is as follows:

|                     |                             |
|---------------------|-----------------------------|
| North Face Closure: | July 1994 to October 1994   |
| Top of Phase I:     | June 1995 to October 1995   |
| West Slope:         | August 1995 to October 1995 |

The next step in the implementation of the *Closure Plan* is to submit it to the MOELP for their approval.