



## Stakeholder Input — Wrinkles in Landfill Liner Construction

*Ohio EPA invites stakeholders to provide input into the development of guidance documents, policies and rules.*

Flexible membrane liner (FML) is a component of the composite liner systems required at municipal, industrial and residual solid waste landfills. The municipal and industrial solid waste landfill rules require the FML to be in direct and uniform contact with the recompacted soil liner, recompacted soil barrier layer, or geosynthetic clay liner beneath it. The residual solid waste rules do not have a similar requirement.

When FML is installed, wrinkles can form, resulting in areas where the FML is not in direct and uniform contact with the underlying surface. If the FML is wrinkled when the leachate collection drainage layer is installed, the wrinkle will be encapsulated and the gap between the FML and the underlying material can remain even after waste placement. Should the FML develop a puncture or tear, the void under the wrinkle will likely fill with leachate and, as a preferential pathway, result in significant volumes of leachate leaking through the liner system. Numerous studies have investigated the impact of wrinkles on leakage and liner durability; a partial bibliography is at the end of this document.

### What input is the Agency seeking?

Ohio EPA's Division of Materials and Waste Management is seeking stakeholder input on approaches to minimize the risk of significant leakage and the vulnerability of the FML; standards for acceptance of wrinkles in landfill liner construction (such as maximum allowable size); and whether guidance, policy or rule is appropriate to address such a scenario. Related information and recommendations should be submitted by September 30, 2013.

The following questions may help guide you as you develop your comments:

- What options are available for addressing the presence of wrinkles in FML?
- What should the Agency take into account when developing guidance or a new standard?
- Is there any information or data the Agency should consider regarding the impact of wrinkles in the FML?

Ohio EPA would especially like to obtain information regarding the following from stakeholders who may be impacted by guidance or new standards addressing wrinkles in FML:

- Would guidance or a new standard have a positive impact on your business? Please explain how.
- Would guidance or a new standard have an adverse impact on your business? Please explain how.

### How can I provide input?

The Agency is seeking stakeholder input on the proposed concepts included in this fact sheet. When preparing your comments, be sure to:

- explain your views as clearly as possible;
- describe any assumptions used;
- provide any technical information and/or data used to support your views;
- explain how you arrived at your estimate for potential burdens, benefits or costs;
- provide specific examples to illustrate your views; and
- offer alternatives.

Written comments will be accepted through close of business September 30, 2013. Please submit input to:

Michelle Braun  
P.O. Box 1049  
Columbus, OH 43216-1049  
[michelle.braun@epa.ohio.gov](mailto:michelle.braun@epa.ohio.gov)

### What if I have questions?

Please contact Annette De Havilland at (614) 728-5373 or  
[Annette.dehavilland@epa.ohio.gov](mailto:Annette.dehavilland@epa.ohio.gov).

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### What is being suggested?

One approach to address wrinkles in FML is to limit the choice of FML material to one that is not as prone to wrinkle development as black HDPE. Options may include PVC, which forms significantly smaller wrinkles than HDPE; use of a white product (not as impacted by solar thermal expansion) instead of a black product; and/or use of an electrically conductive product to aid in locating holes on wrinkles after the leachate collection drainage layer is installed.

Another approach is to establish acceptance criteria for direct and uniform contact such as maximum wrinkle height, width and/or length.

The guidance, policy or rule may incorporate features of both material selection and acceptance criteria.

### What's the next step?

After the September 30, 2013 comment deadline, Ohio EPA will evaluate the input and facilitate additional stakeholder engagement as needed to further evaluate the construction of solid waste landfill composite liner systems with respect to managing wrinkles that occur in the FML.

### How can I track the Agency's consideration of this issue?

Stakeholders are encouraged to sign up for the Agency's electronic mailing list which provides automatic updates about various topics. Registered users of the Solid Waste Landfills mailing list will receive progress updates and be notified when new information is posted. To sign up, go to [ohioepa.custhelp.com/ci/documents/detail/2/subscriptionpage](http://ohioepa.custhelp.com/ci/documents/detail/2/subscriptionpage).

### Partial Bibliography

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