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COMMENTS ON STATE OF NEW MEXICO OCD
NEW RULES GOVERNING SURFACE WASTE MANAGEMENT

Gary Kolbasuk
Raven Industries, Inc.

19.15.2.53.F.10.c & e. & f. & H.2.h.i: DRAINAGE LAYERS.

The leak detection system, leachate collection system and the leachate collection system protective layer is specified at two feet of soil with a minimum hydraulic conductivity of 1×10^{-5} cm/sec or greater.

The U.S. EPA Minimum Technology Guidance for Subtitle D, non-hazardous solid waste, is a drainage layer 12" thick with a minimum hydraulic conductivity of 1×10^{-2} cm/sec or greater. Studies on long term drainage system behavior have shown that chemical and biological clogging can significantly reduce the hydraulic conductivity of drainage systems, casting doubt on 1×10^{-2} cm/sec being high enough to provide adequate drainage to prevent the hydraulic head on the lining system from exceeding the one foot.

The proposed rule specifies a drainage layer with a hydraulic conductivity 1,000 times less than mandated by the U.S. EPA. It is requested that the rules be changed to reflect the Subtitle D requirements of a minimum of 1×10^{-2} cm/sec.

19.15.2.53.F.10.b & d. & 11.a.i. & H.2.c: GEOMEMBRANE COMPOSITION

Geomembrane requirements called out in the U.S. EPA Minimum Technology Guidance for Subtitle D, non-hazardous solid waste, is a 30 mil or thicker geomembrane unless the geomembrane is high density polyethylene (HDPE), in which case the geomembrane must be a minimum of 60 mils thick.

The proposed rules call for the geomembrane to be a "30 mil flexible PVC or 60 mil HDPE liner, or an equivalent liner approved by the division." This is a defacto specification for the liner to be PVC. As the material of choice, PVC is automatically approved, putting the burden to prove equivalency on those wishing to use other types of geomembranes. It also places the burden on agency personnel to review such applications and determine if equivalency has been demonstrated.

PVC is not the material normally used as a landfill liner or landfill cover at Subtitle D facilities in the United States. Geomembranes such as a linear low density polyethylene

(LLDPE) have superior properties to that of PVC and are allowed to be used in thickness of 30 mils or thicker.

It is requested that the rules be changed back to wording similar to Subtitle D which allow a generic lining material of 30 mils or thicker, unless the liner is HDPE, in which case it must be at least 60 mils thick.

19.15.2.53.F.11.a.i.: GEOMEMBRANE SPECIFICATION

This section requires the liner to meet or exceed ASTM standards for PVC. There are no ASTM standards for PVC liners. PVC liners can be tested according to a number of ASTM test methods.

If it is desired for this rule to contain a liner specification, it is suggested that a generic specification in the form of a table be added. The specification can include minimum values for a number of key properties such as tensile strength, tensile elongation, tear resistance and puncture resistance.

19.15.2.53.F.11.a.i. & H.2.c: GEOMEMBRANE COMPATIBILITY

The rules require liner compatibility shall comply with U.S. EPA SW-846, Method 9090A. This method is somewhat out of date. It is just a procedure and does not contain any guidance for interpreting the results to determine compatibility.

Suggest considering evaluation of compatibility by using ASTM D5322, Standard Practice for Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids and ASTM D 5747, Standard Practice to Tests to Evaluate the Chemical Resistance of Geomembranes to Liquids. Since these are just procedures as well, the rules might contain some guidance for interpretation of the results. Suggested values are offered in the literature by O'Toole, Little and Koerner.

19.15.2.53.F.10.h.: COVER SYSTEM

The U.S. EPA Minimum Technology Guidance for Subtitle D, non-hazardous solid waste, calls for a geomembrane in the cover system when a geomembrane is used in the lining system beneath the waste. To prevent the waste disposal facility from filling with liquid in the event of a failure of the leachate removal system, it is recommended that the cover system be no more permeable than the primary lining system.

It is recommended that the rules be modified to include a geomembrane in the cover system.

19.15.2.53.F.11.b.ii: ADDITIONAL GEOMEMBRANE REQUIREMENTS

Geomembranes are intended to be hydraulic barriers. They are not intended to be a structural element, holding materials above them in place by virtue of the geomembranes tensile strength. The materials on top of the geomembrane are held in place by frictional forces transferred through the geomembrane via shear strength.

Suggested editorial correction: Change tensile forces to shear forces.

(Any geosynthetic material installed on a slope greater than 25% shall be designed to withstand the calculated shear force acting upon the material)

Gary Kolbasuk
605-335-0174
Gary.Kolbasuk@RavenInd.com