


<h1 style="margin: 0;">GEOTECHNICAL</h1> 	<p><i>Section</i></p> <p>SPECIAL GEOLOGIC CONSIDERATIONS</p>
	<p><i>Subject</i></p> <p>Acid Producing Shales</p>

**DESIGN CONSIDERATIONS
FOR ACID
PRODUCING SHALES:**

Special design considerations relating to Acid Producing Shales must be addressed during design of projects.

Special Design considerations must be addressed for Acid Producing Shales when the following Geologic Formations are encountered in cut sections and/or when the shale is used in embankment fill sections. The Geologic Formations of Acid Producing Shales include: the **New Albany Shale**, the **Chattanooga Shale**, and **Ohio Black Shale**.

In general, for cut sections, the cut slope is over-excavated a minimum of 4.5 feet using a serrated slope on a 1½ :1 or 2:1 slope (See Exhibit # 20) and covered with 4 feet of clay soil or non-durable shale to prevent production of acidic run-off and covered with 0.5 feet of top soil to support vegetation.

In general, when the shales are used in embankment fill sections, the acidic shale is encased inside the embankment. The encasement of the acidic shale includes using 2.5 feet (parallel to fill slope) of non-durable shale or clay soil as a barrier to protect the acidic shale from the weathering elements such as water and air. However, a minimum of 4 feet of non-durable shale or clay soil is recommended on top of the embankment to control corrosion of guardrail and/or sign post etc. from the acidic shale. If available, the side slopes shall be dressed with 0.5 feet of top soil to support vegetation.

These are general guidelines and do not cover all of the specific recommendations that are needed in a Geotechnical Report or cover other options available to mitigate the production of acidic runoff conditions.

