

Highwalls

For the purposes of abandoned mine reclamation, highwalls are precipices that exceed 8 feet in height, and are steeper than 2.7 horizontal feet per every vertical foot (2.7:1, 37% grade, or 20°).

A highwall is considered dangerous if it:

- has loose material on it's slopes,
- is steeper than 50°,
- could injure people in their homes or on a public roadway
- is in an area with high public visitation
- could damage homes or public roadways



Top of 50-ft near-vertical highwall adjacent to a parish road (St Tammany Parish – AML Inspector at right)



Highwall surrounding pit lake. A swimmer would have difficulty exiting. (Grant Parish)



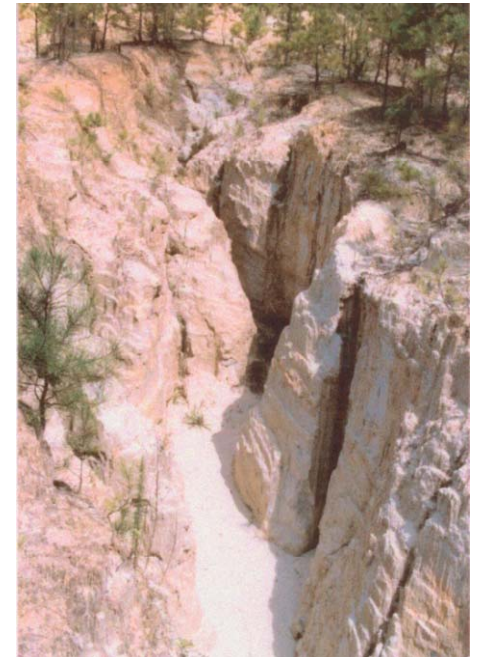
Highwall. ATV tracks indicate heavy visitation. (Grant Parish)



Vertical Highwall. ATV tracks indicate heavy visitation. (Grant Parish)



Highwall in Grant Parish.



Severe erosional valley creating a dangerous highwall (Grant Parish)

Spoil and Embankments

- Quite a lot of surface-mined material is not marketable. This includes the overburden, or material that has to be moved in order to get to the sand or gravel seam. This “spoil” is stockpiled to the side to get it out of the way of the mining operation. Louisiana’s geologic conditions are such that this spoil is generally not toxic. However, large piles of loose material pose a significant safety risk.
- A pile or embankment is considered dangerous if it:
 - Has unstable or steep slopes (>37% grade)
 - Is within 300 feet of a populated area, public road, or recreational area
 - If wind-blown dust or grit could harm nearby people
 - If it contains any toxic material
 - If it is heavily visited, especially by ATV users, who are more likely to collapse the slopes
- Some spoil areas are in more remote areas or have stable slopes. These are not a safety risk, but often render the land unusable.



Partially vegetated spoil pile (East Feliciana Parish)



Steep embankment on the side of a spoil pile in background (Grant Parish)



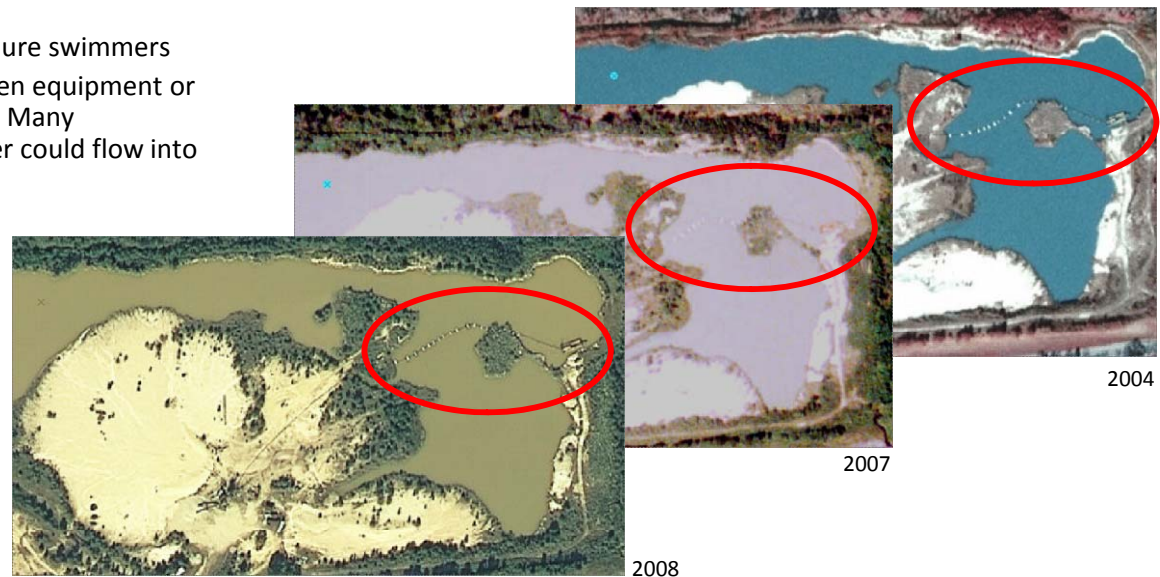
Dangerously steep embankment. ATV tracks indicate heavy visitation. (Ouachita Parish)

Hazardous Water Bodies and Impoundments

- Surface mining involves digging a large pit in order to reach the mineral of interest. In Louisiana, any pit left open will quickly fill with water, either from rainfall or from groundwater seepage. If the mine pit was cleaned out and the sides were well sloped, this can be a fine lake. However, if care was not taken at the end of mining, these impounded waters can be very dangerous. These pit lakes are often very attractive to trespassers as swimming holes. It is common for the pit to be ringed with highwalls, which are attractive as diving platforms, but are too steep to allow the swimmer to escape.
- An impoundment is dangerous if it:
 - Poses a threat to human health and safety
 - Could break open and flood homes, roads, improved property, or public facilities
 - Contains sunken equipment which could injure swimmers
- A pit may contain polluted water if it contains sunken equipment or if people have dumped trash or old appliances in it. Many abandoned mines are in areas where polluted water could flow into a source of drinking water.



Highwall surrounding pit lake. A swimmer would have difficulty exiting. (Grant Parish)



Series of aerial photos showing a site where the dredge has not been moved since 2004, suggesting that it has been left abandoned on site. (St Helena Parish)

Unvegetated Areas

- Areas that are wholly or partially unvegetated contribute to downgradient sedimentation, which may adversely affect streams, or contribute to local flooding or habitat degradation.



Unvegetated area. Note the heavy erosion. (Grant Parish)



Unvegetated area (Grant parish).

Clogged Streams and Clogged Stream Lands

- Any large earth-moving activities will remove the existing vegetation in an area. This leaves large areas open to erosion. Spoil piles are especially erodible. The eroded material travels with storm water and is eventually deposited in local streams. The extra sediment changes the habitat of the stream (muddy-bottomed bayous become sandy, for instance) and can threaten any endangered plants and wildlife living there. The streams are often overloaded with sediment that they can't carry and become clogged. A clogged stream can't hold as much water as it originally could, and seasonal floods become much more severe. Flow within a clogged stream is also changed significantly, often resulting in treacherous currents for swimmers and boaters.



Clogged Stream (East Feliciana Parish)



Clogged stream land (East Feliciana Parish)

Habitat Destruction

- Abandoned mine sites can have an adverse effect on threatened and endangered species by destroying their habitat, either through large amounts of vegetation removal or by altering local streams. The Louisiana Department of Wildlife and Fisheries will determine whether a sensitive plant or wildlife population is present and whether it is negatively impacted by site conditions.



The Louisiana Quillwort grows only on sand bars in Washington and St Tammany Parishes in Southeastern Louisiana, and Jackson and Perry Counties in Southern Mississippi. It grows only on sand bars, predominantly along the Bogue Chitto River, which is heavily mined. The major danger to the Louisiana Quillwort is habitat loss.

<http://www.wlf.louisiana.gov/experience/threatened/louisianaquiliwort.cfm>

http://www.centerforplantconservation.org/Collection/CPC_ViewProfile.asp?CPCNum=2345

http://www.fs.fed.us/wildflowers/rareplants/profiles/tep/isoetes_louisianensis/index.shtml



The Inflated Heelsplitter Mussel, threatened by habitat destruction, now is only found in Louisiana in the Amite River, which is heavily mined, contributing to further loss of habitat.

<http://www.wlf.louisiana.gov/experience/threatened/inflatedheelsplitter.cfm>

Abandoned Equipment

- Abandoned equipment still on site can include bulldozers, backhoes, dredges, or draglines; or immobile structures, such as wash plants, storage sheds, or office facilities. These facilities and equipment can become dilapidated and be dangerous. Abandoned equipment can also cause polluted soil or water if they leak fuel, oil, or hydraulic fluid.



Abandoned fuel storage tanks and equipment (East Feliciana Parish)



Abandoned dragline (Grant Parish)



Dilapidated facility (East Feliciana Parish)

Promiscuous Dumping

- Abandoned mines are a popular place to dispose of household waste or any other unwanted items. People dumping waste may think that they are helping by filling in the hole, but these dumps can contain hazardous material which may cause pollution, or they may attract vermin that bring disease. This is why unauthorized dumping is illegal in Louisiana.



Wood waste and construction debris dumping in Grant Parish.



Household waste dumping (St. Tammany Parish)



Discarded tires (Grant parish)