



Procedural and Technical Considerations for the Holocene Faults Location Restriction Demonstration

THIS POLICY DOES NOT HAVE THE FORCE OF LAW

APPLICABLE RULES

MSW: OAC 3745-27-20(C)(3)
OAC 3745-27-06(C)(6)
ISW: NA
RSW: NA
Tires: NA

PURPOSE

This document outlines technical and procedural considerations for the Holocene faults location restriction demonstration (LRD) required by Ohio Administrative Code (OAC) 3745-27-20(C)(3) and 3745-27-06(C)(6) [see also OAC 3745-27-20(A)(3)(e), and 3745-27-06(C)(1)].

APPLICABILITY

This guidance document applies to applicants proposing a new municipal solid waste (MSW) unit(s) after June 1, 1994.

LRDs for any new units in authorized fill areas should have already been completed and placed in the operating record. Existing units are not required to provide the location restriction demonstration.

BACKGROUND

OAC 3745-27-20(C)(3) states, "The sanitary landfill facility is not located within two hundred feet of a fault that has had displacement in Holocene time unless the owner or operator can demonstrate that a distance less than two hundred feet will prevent damage to the structural integrity of the sanitary landfill facility and will be protective of human health and the environment. For the purposes of this rule, "fault,"

"displacement," and "Holocene" have the following meanings:

"Fault" means a fracture along which strata on one side of the fracture have been displaced with respect to strata on the other side of the fracture.

"Displacement" means the relative movement of any two sides of a fault measured in any direction.

"Holocene" means the most recent epoch of the Quaternary period extending from the end of the Pleistocene to the present."

An MSW landfill is not to be located within 200 feet of the outermost boundary of a fault that has experienced displacement during the Holocene Epoch (past 11,000 years), unless the owner or operator can demonstrate that damage to the structural integrity of the facility will not occur as a result of being located at a shorter distance from the fault and the shorter distance will continue to be protective of human health and the environment.

Earthquakes in Ohio appear to be associated with ancient zones of weakness in the Earth's crust that formed during continental collision and mountain-building events about a billion years ago. These zones are characterized by deeply buried and poorly known faults. To date, no fault in Ohio has exhibited evidence of movement during Holocene time.

PROCEDURE

LRDs for new units in authorized areas should have already been completed. Therefore, this document will address how to proceed with the

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Holocene fault LRD as part of a permit-to-install application for a new unit proposed after June 1, 1994. DSIWM recommends using the following procedure to satisfy the LRD rule requirements. The procedure is presented in two parts. In the first part of the LRD, the applicant determines whether or not the MSW landfill is located within two hundred feet of a fault that has had displacement in Holocene time. If the MSW landfill is within 200 feet of a Holocene fault, then the applicant performs the second part of the LRD. The second part identifies and justifies the acceptable distance from the Holocene fault to ensure the integrity of the structural components of the proposed new unit(s).

Part 1: Determining Existence of Holocene Faults

The use of the United States Geological Survey (USGS) map series known as the "Preliminary Young Fault Maps, Miscellaneous Field Investigation (MF) 916" (1978) is recommended for the initial assessment of fault location for the proposed or expanding landfill to determine if the 200 foot setback is met. The 1978 version shows no faults in Ohio, but future versions may. Until an updated version is made available, it will not be necessary to copy the Young Fault Map for the LRD.

The second stage of the assessment is to determine if the facility is in an area of seismic activity. The Ohio Department of Natural Resources (ODNR), Division of Geological Survey, (www.dnr.state.oh.us/geosurvey/gen/seismic/seismic.htm), publishes a map of earthquake epicenters in Ohio. If the facility is located near an epicenter, DSIWM recommends the applicant conduct a geologic reconnaissance of the site to determine whether a fault which has had

movement during Holocene time is within 200 feet of the facility. Consultation with the Ohio Department of Natural Resources (ODNR), Division of Geological Survey is recommended. Documentation of conclusions should be included in the demonstration.

Part 2: Alternative Distance

If the facility is within 200 feet of a Holocene fault, the applicant must demonstrate in the second part of the LRD that damage to the structural integrity of the facility will not occur at the alternative distance.

DSIWM does not consider adding reinforcement (geogrids) or selecting an engineered component material with protective or reinforcing attributes to be effective in preventing damage to the structural integrity of the facility.

POINT OF CONTACT

If you have questions regarding this document or would like additional information, please contact:

Central District Office DSIWM Supervisor
(614) 728-3778

Northeast District Office DSIWM Supervisor
(330) 963-1200

Northwest District Office DSIWM Supervisor
(419) 352-8461

Southeast District Office DSIWM Supervisor
(740) 385-8501

Southwest District Office DSIWM Supervisor
(937) 285-6357

Central Office Processing and Engineering Unit
(614) 644-2621