

DATE: July 24, 2018

I urge the Task Force to

1. Direct the ISGS/ISWS/IEPA to identify legacy landfills which pose a hazard to surface and ground water resources and prioritize them using existing, available information such as available from ISGS, ISWS, PRI, IDNR, IEMA, FEMA, NRCS, and other agencies.
 - a. Landfills over unsuitable geology (ISGS)
 - b. Landfills over shallow aquifers (ISGS)
 - c. Abandoned landfills
 - d. Landfills within or proximity to 500 year floodplain (ISWS, FEMA, IEMA)
 - e. Landfills near dwellings and private wells (NRCS, ISGS)

Surface and airborne (HTEM) geophysical studies as proposed by the ISGS can supplement available information.

2. Collect and archive institutional information about old landfills for present (as in #1) and long term use. This data is available from IEPA, municipalities, counties, solid waste management associations, companies and corporations, and individuals [mainly inheritors of property owned by family members]. Information is available from ISM, ISGS, ISWS, IEMA, FEMA, and other agencies.
 - a. List of industries and companies which generate wastes including from historical processes.
 - b. List of historical industries and enterprises which generated wastes
 - c. Reports, investigations and studies of landfill sites and surrounding areas.

These data should be compiled for the MAPTF and evaluated archived and updated with notification made to all parties.

Direct the Illinois Pollution Control Board and Illinois Environmental Protection Agency to

3. Update current methods and increase training of inspectors to incorporate remote sensing (aerial photography and lidar), geographic information systems (GIS), and database management to guide field inspections of all legacy landfills. This would include
 - a. Preparation of georeferenced image maps showing defects such as depressions, erosion, landslides, barren areas, leachate seeps, trees, and vegetation anomalies using lidar and aerial photography and image processing/enhancement for use in field inspections. Georeferenced image maps should be prepared by inspectors (ideally) trained in image processing of remote sensing imagery and GIS, trained technicians, or expert remote sensing specialists.
 - b. Training of inspectors to use GIS and remote sensing technology to track defects, structures, appliances, and wells for routine inspection and sustainable management for closed landfills.
 - c. Landfill inspectors should be required to regularly update knowledge and skills to maintain legacy landfills and reduce risk of contamination of surface and ground water.

Propose legislation that will:

4. Promote community support for subsequent use and maintenance of legacy landfills where this can be safely done. This can be accomplished by
 - a. Financial incentives for privately owned legacy landfills to enter into partnerships with Forest Preserve Districts, Park Districts, and conservation clubs as a means to provide funding for a higher level of maintenance.
 - b. Financial incentives for publicly owned legacy landfills to enter into partnerships with Forest Preserve Districts, Park Districts, and conservation clubs as a means to provide funding for a higher level of maintenance.

Abbreviations

- a. HTEM – Helicopter-borne, Time domain, Electromagnetic geophysical survey.
- b. IHPA– Illinois Historic Preservation Agency
- c. IDNR- Illinois Department of Natural Resources
- d. IDOT - Illinois Department of Transportation
- e. IEMA –Illinois Emergency Management Agency
- f. IEPA – Illinois Environmental Protection Agency
- g. ISM – Illinois State Museum
- h. ISGS – Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign
- i. ISWS – Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign
- j. PRI – Prairie Research Institute, University of Illinois at Urbana-Champaign
- k. NRCS – Natural Resources Conservation Service, U.S. Department of Agriculture
- l. FEMA – Federal Emergency Management Agency
- m. MAPTF – Mahomet Aquifer Protection Task Force

Christopher Stohr, PhD, PG
cstohr@geo-imaging.com 779.234.8721
cstohr@illinois.edu

Member, Champaign County Board, Illinois
President and Founder, Applied Geo-Imaging Solutions, Inc. Catlin, IL
Research Affiliate, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign, IL