



JOHN ENGLER, Governor

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

RUSSELL J. HARDING, Director

REPLY TO:

ENVIRONMENTAL RESPONSE DIVISION  
KNAPPS CENTRE  
PO BOX 30426  
LANSING MI 48909-7926

July 19, 1996

Mr. Robert Metcalf  
General Motors Corporation  
CLCD North  
902 E. Hamilton Ave.  
Flint, Michigan 48550-8504



Dear Mr. Metcalf:

SUBJECT: Linden Road Landfill, Flint Township, Genesee County, Michigan

The Michigan Department of Environmental Quality (MDEQ), Environmental Response Division (ERD) has reviewed the January 1996 Remedial Action Plan (RAP), prepared by Roy F. Weston, Inc. (Weston) for the Linden Road Landfill site located in Flint Township, Genesee County. The proposed RAP is based on limited land/resource use criteria and may be approvable if further information is provided. The following comments stem from the MDEQ review of the RAP and must be addressed before approval can be granted:

1. The Remedial Investigation (RI) for the site is incomplete. The following items must be addressed to complete the RI for the site:
  - a. Further characterization of the groundwater is necessary both within the interior of the landfill and downgradient of the landfill. All groundwater sampling conducted to date has been along the perimeter of the landfill with no information regarding the groundwater quality within the landfill itself. A limited assessment of groundwater quality within the interior of the landfill is necessary to ascertain what cleanup objectives can be met (i.e., whether criteria can be satisfied at appropriate compliance points). The MDEQ recommends the installation of no less than five additional monitoring wells in the interior of the landfill to characterize groundwater quality. These wells may also be used in calculating groundwater flow direction and/or long-term monitoring of groundwater quality.

In addition, there are an inadequate number of downgradient monitoring wells for the shallow aquifer. With the site being 40 acres in size, fill material randomly disposed of across the site, groundwater flow direction varying between the northeast and southeast, and the existing monitoring wells approximately 600 feet apart, additional wells should be installed to more adequately monitor groundwater quality moving off-site.
  - b. The waste boundaries must be defined to the north and south of the site to determine if fill material and any associated contamination exists off-site. If any contamination associated with activities at, or released from, the Linden Road Landfill exists off-site, the RAP must include a proposal for remedial action for those areas. Please be advised that the "Dye Road Dump" site located to the west will be addressed separately, therefore, the extent of waste material on or extending onto that property will not need to be addressed as part of the RAP for this site.

- c. The RI should include an evaluation of the presence of methane to determine whether any controls are required as part of the final remedy.
  - d. An assessment must be conducted along the storm drain which runs along the south part of the landfill to evaluate the possible migration of contaminants into the drain. If the potential exists for contamination to migrate or to have migrated into the drain, water and/or sediment samples should be collected to evaluate the effects of the landfill on the drain.
  - e. The RI should address the statement found on page 2-4 of Weston's *Phase 1 Environmental Assessment*, dated February 1990 which states that the former gravel pit was excavated to a depth of approximately 40 feet. Could this former excavation act as a conduit for contamination to migrate vertically to a deeper groundwater? Please explain.
2. The RAP must include a specific end use or uses for the property so that existing and future exposure potential can be evaluated. The MDEQ cannot approve the RAP for a generalized limited resource/land use category without knowing of future use of the property. In addition, the MDEQ cannot adequately review the proposed site preparation, site grading, soil cover, or the drainage/stormwater management plans without knowing the future end use of the property.
  3. Documentation must be submitted indicating that the current zoning of the property is consistent with the categorical criteria being proposed or that the governing zoning authority intends to change the zoning designation, if generic commercial or industrial criteria are proposed for closure.
  4. The RAP must address all pertinent exposure pathways and include an explanation on how the RAP will be protective of the proposed end use for the property, including how the RAP will be protective of any future construction activities at the site, unless construction activities are precluded through a restrictive covenant.
  5. The RAP should include an evaluation on how the proposed soil cover will be protective for the proposed end use for the property. Why was a soil cover system selected over an Act 64 or Act 641 cap?
  6. The RAP should include a health and safety plan (HASP) for remedial action and operation and maintenance activities. Air monitoring along the perimeter of the landfill should be included in the HASP for any remedial activities which may potentially cause volatile organic compounds (VOC's) or fugitive dust to be emitted from the landfill.
  7. The RAP must include a legally enforceable agreement with the MDEQ that includes the provisions for the following:
    - a. Land-use or resource use restrictions that are applicable to the closure of the site. These include, but are not limited to: groundwater use restrictions from both the upper water table zone and restrictions on drilling through the waste material to deeper aquifers, and restrictions on subsurface soil excavation activities.
    - b. Long-term monitoring of the integrity of the cap and of groundwater quality. In addition, provisions should be included to address any future migration of contamination off-site. Please note that the proposed plan to only monitor for VOC's and to monitor for a period until the groundwater criteria has been met for just two consecutive sampling events are

unacceptable. The department will make a determination as to the parameters for groundwater monitoring and length of monitoring upon completion of the RI.

- c. An operation and maintenance plan to maintain the integrity of the remedial action, once implemented. The details of this plan will be established after further information about the scope of the remedy has been provided to MDEQ.
- d. A financial assurance mechanism acceptable to the department to pay for monitoring, operation and maintenance, oversight, and any other costs necessary to assure the effectiveness and integrity of the proposed remedial action.

The MDEQ requests that General Motors submit a work plan to address the RI comments listed in item #1 by September 1, 1996. Upon completion of these additional RI activities, a revised RI report should be submitted. As further information becomes available, the MDEQ may have additional comments and/or questions. Upon completion of the RI, a revised RAP that addresses all the above listed comments should be submitted. Also, attached are comments from Dr. Linda Larsen, MDEQ-ERD toxicologist. A revised RAP should also address her comments as well. If you have any questions or would like to discuss any of these items, please contact Mr. Eric Van Riper, Shiawassee District Office, at 517-625-4621, or you may contact me.

Sincerely,



Alan J. Howard, Chief  
Environmental Response Division  
517-335-1104

Attachment

cc: Mr. Ed Peterson, General Motors Corporation  
Mr. John Pettit, Genesee County Health Dept.  
Mr. Eric Van Riper, MDEQ  
Mr. Rodney Mosier, MDEQ  
Ms. Patricia McKay, MDEQ  
Dr. Linda Larsen, MDEQ