



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

**Site-Specific Land Disposal Restrictions
Treatability Variance Approval
The Dow Chemical Company, Midland, Michigan
MID 000 724 724**

In accordance with Title 40 of the Code of Federal Regulations (40 CFR), Section 268.44(h), and the authority granted by the United States Environmental Protection Agency to implement this regulation under R 299.9311 of the administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), The Dow Chemical Company (Dow), Michigan Operations, Midland Plant, is granted a Site-Specific Land Disposal Restrictions Treatability Variance Approval (Approval) by the Department of Environmental Quality (DEQ). The Approval is for contaminated soils, including those contaminated with dioxins and furans, exhibiting a hazardous waste characteristic or containing listed hazardous waste generated during corrective action or as a result of upgrade or maintenance of corrective action management systems, including the Revetment Groundwater Interceptor System (RGIS), and non-routine removal of solids from the Pentagonal, Rectangular or Main Pond of the Tertiary Pond at the facility located in Midland, Michigan (Material Subject to Variance).

The Material Subject to Variance, which is hazardous waste according to the provisions of the Part 111 administrative rules, including soils contaminated by hazardous waste identified by hazardous waste number F039, is now subject to alternate treatment standards pursuant to the following conditions:

1. The Approval is based on the information submitted to the DEQ by Dow in the Variance Petition submitted on October 1, 2007, the *Treatability Variance Petition for Soils Generated from Maintenance and Repair of the Revetment Groundwater Interception System (RGIS), Revision 1*, dated February 1996, and the *Revised Petition for Treatability Variance for Soils Generated from Maintenance and Repair of the Revetment Groundwater Interception System (RGIS) and Corrective Action Management Systems*, dated January 21, 2008, as modified by the June 26, 2015, request for the Variance to include non-routine removal of solids from the Tertiary Pond as an acceptable waste stream covered by the Approval and for the Variance to become a component of Dow's approved Waste Analysis Plan (Attachment XIV.A3 of the License re-application) under the renewal License. If information obtained by the DEQ shows that this information is erroneous, inaccurate, or otherwise unreliable, the DEQ may amend or revoke this Approval.
2. Prior to land disposal, the Material Subject to Variance must not contain concentrations of constituents greater than 50 times the applicable universal treatment standards specified in 40 CFR, Section 268.48, except as allowed in Condition 3, below, for dioxins and furans.

3. If the dioxin and furan standards required by Condition 2, above, are not met prior to land disposal, the Material Subject to Variance must not contain dioxins or furans with a toxic equivalence (TEQ) greater than 50 parts per billion. The TEQ shall be determined using the *2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds*, Van den Berg, M., L. Birnbaum, M. Denison, M. De Vito, W. Farland, M. Feeley, H. Fiedler, H. Hakansson, A. Hanberg, L. Haws, M. Rose, S. Safe, D. Schrenk, C. Tohyama, A. Tritscher, J. Tuomisto, M. Tyskind, M. Walker, and R.E. Peterson. 2006. *Toxicological Sciences* 93 (2):223-241.
4. The Material Subject to Variance must not exhibit the characteristics of ignitability, corrosivity, or reactivity at the time of land disposal.
5. The Material Subject to Variance shall be land disposed in Dow's Salzburg Landfill.
6. Dow must comply with the waste analysis requirements for restricted waste found in 40 CFR, Section 268.7. Records associated with this condition shall be kept in the facility operating record.
7. Data used to demonstrate compliance with this Approval must be submitted to the DEQ in accordance with the requirements of Dow's Hazardous Waste Management Facility Operating License (License).
8. Dow must maintain records of the disposition and volume of soils subject to this Approval consistent with the requirements of Dow's License Condition II.S.
9. Work plans for each modification to a corrective action management system, other corrective action work, or non-routine removal of solids from the Tertiary Pond subject to this Variance must be submitted to the Chief of the Hazardous Waste Section, Office of Waste Management and Radiological Protection (OWMRP), DEQ, for review and approval prior to implementation, consistent with the requirements of Dow's License.
10. All soils determined not to be hazardous waste are not subject to this Approval and shall be managed as required by state and federal law.
11. Dow may petition the DEQ to amend the scope and conditions of this Approval. Minor amendments, such as incorporation of new regulations, may be approved at the discretion of the Chief of the OWMRP. Dow and the Chief of the OWMRP shall allow for notification and comment of interested parties prior to making major changes to the scope of this Approval.
12. If the DEQ determines, at any time, that a new Best Available Technology (BAT) is available as an alternative to both thermal destruction and landfilling for Material Subject to Variance similar in both quantity and contamination to those subject to this

Approval, which allows a significant decrease in risk as compared to the actual risk associated with the disposal of the Material Subject to Variance in the Salzburg Landfill, the DEQ may require Dow to employ that BAT to treat newly-generated Material Subject to Variance in accordance with the then-existing federal Resource Conservation and Recovery Act of 1976 (RCRA) regulations and any applicable laws.

13. This Approval does not preclude Dow from disposing of the Material Subject to Variance in accordance with Part 111 of Act 451 at a properly licensed hazardous waste treatment, storage, or disposal facility or at an out-of-state facility in accordance with the RCRA and that state or country's applicable regulations.
14. Violations of this Approval are subject to the enforcement provisions of Part 111 of Act 451, the RCRA, and other applicable laws.
15. Nothing in this Approval shall affect or limit the DEQ's ability to bring any claim or cause of action or take administrative or judicial action allowed by law against any party.
16. This Approval shall remain in effect during the term of Dow's License, including any extension in time related to review and processing of a timely and sufficient application for renewal of the License and Variance. Dow may request an extension or renewal of the Variance to facilitate corrective action, maintenance or upgrade of corrective action systems, or non-routine Tertiary Pond solids removal at the Midland Plant facility.

The effective date of the Approval is the date signed by the Chief of the OWMRP.



Bryce Feighner, P.E., Chief
Office of Waste Management and
Radiological Protection
Department of Environmental Quality

Date: 9-25-2015