



RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



DAN WYANT  
DIRECTOR

April 22, 2015

Mr. Jose Cisneros, Chief  
Waste Management Branch  
U.S. Environmental Protection Agency, Region 5  
77 West Jackson Boulevard LU-9J  
Chicago, Illinois 60604-3507

RECEIVED APR 30 2015

Dear Mr. Cisneros:

SUBJECT: Michigan Department of Environmental Quality (MDEQ) Recommendation to Approve Coordinated Approval for Cleanup of Polychlorinated Biphenyls (PCBs); Revitalizing Auto Communities Environmental Response Trust (RACER), Former General Motors Company Lansing Plant 2 (Plant 2), Lansing, Michigan;  
**MID 980 700 827**

The Michigan Department of Environmental Quality (MDEQ), Office of Waste Management and Radiological Protection (OWMRP), is recommending concurrence from the U.S. Environmental Protection Agency, Region 5 (EPA Region 5), on a coordinated approval for the revised PCB Interim Response Work Plan for Concrete Vault Removal and Targeted Excavation for the Former General Motors Lansing Plant 2, dated August 18, 2014 (Work Plan), located at 2801 West Saginaw Street, Lansing, Michigan, under the Toxic Substances Control Act (TSCA), Title 40 of the Code of Federal Regulations (CFR), Part 761, as amended. The MDEQ is making this request under the amended final rules for Disposal of PCBs effective August 28, 1998, 40 CFR Parts 750 and 761.

RACER has formally requested approval from the MDEQ of the Work Plan. RACER has formally requested Coordinated Approval from the EPA Region 5 pursuant to 40 CFR Section 761.77 in a letter dated July 22, 2013. Since that time RACER submitted a revised Work Plan dated August 18, 2014, for approval, based on comments received during a conference call between RACER, EPA TSCA staff, and DEQ staff on July 29, 2014.

MDEQ Notice of Intent to Approve Work Plan/Recommendation for EPA Region 5 to Concur with a Coordinated Approval

Plant 2 is subject to the federal Resource Conservation and Recovery Act of 1976 (RCRA), Subtitle C, corrective action requirements of Title 42 of the United States Code (U.S.C.) §6901 *et seq.* and has committed to timely implementation of corrective action requirements, including meeting the federal Government Performance Results Act (GPRA) implementation schedule and completion of final remedies. The MDEQ is the lead in facilitation, oversight, and approval authority for corrective action obligations at the Plant 2 in Lansing, Michigan under its authority as a state authorized to implement RCRA, 42 U.S.C. §6926, and in furtherance of its statutory and regulatory responsibilities under Part 111, Hazardous Waste Management, and Part 201, Environmental Remediation, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), Michigan Compiled Laws (MCL) §§324.11101 *et seq.* and MCL 324.20101 *et seq.* (Part 111 and Part 201, respectively).

The MDEQ supports approval of the proposed Work Plan, and verifies that work completed to address PCBs and work proposed for completion in the plan satisfies the requirements of

Part 111 and Part 201 for PCB remediation. With this determination, the MDEQ submits this notice of intent to approve pursuant to Part 111 and recommendation that the EPA Region 5 concur with a coordinated approval pursuant to 40 CFR Section 761.77(c)(1)(ii).

The regulatory package to address PCB interim response at Plant 2 is complete. The MDEQ also notes the following facility-specific information that may be of use during your consideration of this coordinated approval:

1. Light nonaqueous phase liquid (LNAPL) is present within the fill and interbedded zone in the central portion of Plant 2 (Area 5-2) where the PCB interim response is proposed. The LNAPL consists of cutting oil that contains elevated concentrations of chlorinated volatile organic compounds (VOCs), PCBs in some areas, and certain VOCs and semivolatile organic compounds (SVOCs) including 1,4-dioxane. While 1,4-dioxane was not detected in any soil or LNAPL samples collected in Area 5-2 (detection limits were elevated), historical operations and the footprint of the dissolved phase plume indicate LNAPL was likely the historical source of the 1,4-dioxane. 1,4-dioxane is miscible in water and has an octanol-water partition coefficient of approximately 0.27 (EPA 2006), indicating that a significant fraction of the 1,4-dioxane mass may have partitioned out of the LNAPL and into the aqueous phase. Once dissolved, 1,4-dioxane is relatively unaffected by sorptive mechanisms; however, it can diffuse into static pore water (water that resides in the fraction of pore space that does not contribute to advective transport). Here it can act as a long-term source of impacts through back-diffusion into migratory pore water. Thus, while the majority of the 1,4-dioxane mass may be present in the aqueous phase in Area 5-2, there may still be 1,4-dioxane in the LNAPL and in static pore water, and the LNAPL source area may act as an ongoing source of 1,4-dioxane impacts to groundwater in downgradient areas. The lateral and vertical extents of the LNAPL plume and associated soil and groundwater impacts are defined; mobility and recoverability testing indicates that the LNAPL plume is not migrating and that there is only a limited potential for recoverability based on American Society of Testing and Materials (ASTM) International (ASTM 2006) and Interstate Technology and Regulatory Council (ITRC) methods (ITRC 2009; State of Michigan 1994). Please note that the 1,4-dioxane detections in the central portion of Plant 2 appear unrelated to the higher concentration 1,4-dioxane plume released from a source area on Plant 3 and migrating into the bedrock along the western side of Plant 2.
2. The proposed PCB Interim Response Work for Concrete Vault Removal, Test Pit Investigation and Delineation of PCBs, is located Area 5-2.
3. After completing all interim measures and assessing the corrective measures alternatives, the proposed final corrective measures alternative for the Plant 2 Site is:
  - Land Use Restrictions: Limit future use for the entire site to commercial and/or industrial, requiring site-wide contaminated soil management, and incorporating site-wide vapor exposure restrictions. The restrictions will also include health and safety requirements for intrusive activities in Area 2, Area 5-1, Area 5-2, Area 5-3, and Area 5-5.
  - Groundwater Use Restrictions: Prohibit the use of groundwater for consumption, irrigation, or any other purpose with the exception of evaluating groundwater, remediation of subsurface contamination, or short-term dewatering for construction purposes.

- Monitored Plume Stability: Implement a site-wide groundwater monitoring program that provides data to verify plume stability and preserve the current condition of existing surface cover (building slabs, asphalt, concrete, etc.) in the vicinity of soil and groundwater impacts to minimize infiltration and maximize the potential for the groundwater plume to remain stable and on site.
- Caps: Utilize caps to reduce the potential for exposure to soils exceeding direct contact criteria (DCC) and particulate soil inhalation criteria (PSIC), and to mitigate potential direct contact risks associated with LNAPL exposure. Existing building slabs will be utilized as caps in Area 5-1, Area 5-2, and Area 5-3. Existing cover (e.g., existing soil, gravel, concrete, or asphalt) or placement of clean soil will be used as a cap in Area 2 and Area 5-5.

The facility is still in the process of conducting additional sampling and evaluation as part of the phased RCRA Facility Investigation process and based on those results the corrective measures alternative for Plant 2 will be re-evaluated, revised as appropriate, and submitted for MDEQ review and approval.

The MDEQ determined that PCB concentrations found at the Plant 2 facility in excess of the Part 201 cleanup criteria for PCBs presented an unreasonable risk to human health and the environment and required further assessment. The MDEQ applied Part 201 cleanup criteria and risk-based processes to assess risk from exposure to PCB contamination at the Plant 2 facility and considered response actions, land use, engineering, and/or exposure controls as allowed under Part 111 and Part 201 and consistent with the goals of RCRA corrective action.

The MDEQ has determined that the Work Plan, complies with corrective action objectives of Part 111/RCRA and the associated environmental protections standards of Part 201. The MDEQ is requesting the following:

1. That the EPA Regional Administrator make a determination under §761.77(c)(1)(ii) that Part 111 requires management of PCB contamination that is no less stringent than the applicable TSCA PCB requirements found at §761.61(c) or §761.62(c). For background information on the Part 111 corrective action requirements including Part 201 cleanup criteria, see section below;
2. That the EPA Regional Administrator make a determination that the MDEQ-approved Work Plan, constitutes a "PCB decision or enforcement document" that conforms to the requirements of the TSCA PCB requirements found at §761.77(c); and
3. That the EPA Regional Administrator grant TSCA PCB Coordinated Approval.

#### Background: Part 111 Corrective Action and the Use of Part 201 Environmental Protection Standards

The MDEQ has facilitation, oversight, and approval authority for corrective action obligations as a state authorized to implement the RCRA, as amended, Subtitle C Hazardous Waste Management Program, at Title 42 of the United States Code (U.S.C.), §6901 *et seq.* Michigan implements its Hazardous Waste Program, including corrective action obligations, under Part 111 of the NREPA, §324.1101 *et seq.* In accordance with the Michigan Administrative Code (MAC) R 299.9629(3)(a)(ii), (iii), (b)(ii), and (iii), corrective action requirements include the groundwater protection standards and environmental protection standards for other media established pursuant to Part 201, Environmental Remediation, of the NREPA. EPA Region 5

has concurred with the use of the Part 201 cleanup criteria for corrective action in Michigan with a Corrective Action Memorandum of Understanding entered into by the EPA and the MDEQ on November 3, 2000, and the addendum letter dated April 15, 2002; see [http://www.michigan.gov/deq/0,1607,7-135-3312\\_4118\\_4240-56396--,\).html](http://www.michigan.gov/deq/0,1607,7-135-3312_4118_4240-56396--,).html).

The methodology for calculation of Part 201 generic cleanup criteria is consistent with that presented in the EPA's "Soil Screening Guidance: Technical Background Document" (May 1996) and the Risk Assessment Guidance for Superfund (1989). Because the Part 201 cleanup criteria was promulgated in 2002, the current criteria may be inconsistent with the EPA's regional screening levels (RSLs). The RSLs are updated to reflect more recent risk assessment methodologies and toxicity values.

Part 201 cleanup criteria are back-calculated from a target cancer risk for carcinogens or a hazard quotient for noncarcinogens. The statutory target cancer risk under Part 201 is one additional cancer above the background cancer rate for 100,000 individuals ( $10^{-5}$ ). A hazard quotient of one is used to derive criteria for noncarcinogenic compounds. Criteria are developed based on generic assumptions that characterize patterns of human exposure associated with the residential and nonresidential land use categories. Generic cleanup criteria have been developed for residential and nonresidential land use. Consistent with the EPA guidance, a mix of upper bound and midrange values are chosen to represent a reasonable maximum exposure for a human receptor identified as the most likely to represent the pattern of activity for each land use. Therefore, if site concentrations do not exceed criteria, it may be assumed that exposure to contaminants will not result in an unacceptable risk. Conversely, concentrations that exceed criteria indicate that exposure to site contaminants may result in an unacceptable risk of adverse health effects.

Criteria for groundwater and soil have been calculated for several human exposure pathways including drinking water ingestion, soil leaching to groundwater, incidental ingestion and dermal contact with soil, volatile and particulate releases to ambient air, and groundwater and soil volatilization to indoor air. Additional criteria for the protection of aquatic species, terrestrial wildlife, or human secondary exposures are applicable to groundwater that vents to surface water bodies. At sites of environmental contamination where multiple pathways are relevant, the most restrictive criterion for each media is chosen as the applicable cleanup goal.

While the Part 201 Program relies heavily on the generic cleanup criteria to evaluate sites of environmental contamination, professional judgment is also used to identify those situations that require more restrictive cleanup. For example, if site conditions result in overland runoff of soil contaminants to surface waters, response action may be required even where soil concentrations do not exceed the applicable generic criteria.

For PCBs in soil, the Part 201 soil direct contact pathway results in the most restrictive generic cleanup criteria. The Part 201 DCC consider both incidental ingestion of soil and direct dermal contact with soil. The following table presents the current, promulgated DCC for PCBs for each land use category.

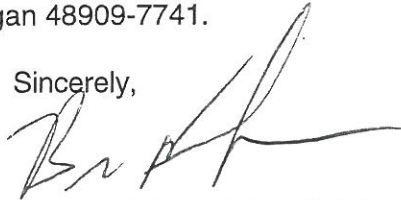
Land Use Category	Part 201 DCC in parts per million (ppm) or milligrams per kilogram (mg/kg)
Residential	4.0 (1.0 to be no less stringent than TSCA when applicable)
Nonresidential	16

Compliance with the DCC is required throughout the soil profile, including soils at depth, since it is assumed that, without appropriate and reliable land use restrictions, subsurface soils may be brought to the surface in the future.

Part 201 requires that a state drinking water standard, if available, be used as the cleanup criterion for groundwater used as a source of drinking water. The Michigan standard is identical to the federal maximum contaminant level (MCL) for PCBs of 0.5 parts per billion (ppb) ( $\mu\text{g/L}$ ). If groundwater is currently venting to surface water or may vent to surface water in the future, the water quality standard for protection of surface water of 0.2 ppb ( $\mu\text{g/L}$ ) for PCBs must be met in the groundwater before mixing with surface water.

We appreciate your willingness to work with the MDEQ on this TSCA PCB Coordinated Approval process. Enclosed is our draft approval letter. We hope to receive concurrence on this approval or an extension request within 30 days. Should you require further information, please contact Mr. Peter Quackenbush, at 517-284-6568; quackenbushp@michigan.gov; or MDEQ, OWMRP, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,



Bryce Feighner, P.E., Chief  
Office of Waste Management and  
Radiological Protection  
517-284-6551

Enclosure

cc: Mr. Dave Favero, RACER

Mr. Peter Ramanauskas, EPA, Region 5

Ms. Jean Greensley, EPA Region 5

Ms. DeLores Montgomery/Dr. Deb MacKenzie-Taylor, MDEQ

Ms. Virginia Himich/Mr. Peter Quackenbush, MDEQ

Mr. John McCabe/Mr. Joseph Rogers, MDEQ

Corrective Action File