

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
INDIANAPOLIS

OFFICE MEMORANDUM

Date: March 8, 2023

To: IDEM Office of the Commissioner

From: IDEM Office of Land Quality
Chemistry Services Section

Subject: Analytical Results for Ohio Derailment Waste Soil Samples
Laboratory Report Date: March 8, 2023
Sampled: March 4, 2023
IDEM Sample Numbers: WS-1, WS-2, WS-2 Dup
Laboratory Sample Numbers: 10644640001 -10644640003
Laboratory: Pace Analytical

IDEM OLQ Chemistry Services Section reviewed the analytical results for the samples identified above according to the quality criteria contained in the Laboratory Services Contract (RFP 21-67284) and Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, and its updates.

Technical Review Comments:

The purpose of this event was to sample waste soil for dioxins to determine if acceptable for disposal. Three samples were collected on 3/4/2023 - WS-1, WS-2, and WS-2 Dup. The collected samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The analytical method generates results for both dioxins (PCDDs) and furans (PCDFs); therefore, all reported results were evaluated. Samples were also analyzed for % moisture, and PCDD/PCDF results were reported on a dry weight basis in $\mu\text{g}/\text{kg}$ (micrograms/kilogram = parts-per-billion = ppb).

Results for the following Total PCDD and PCDF groups were reported for each sample and summarized on the attached table:

- TCDD (Tetrachlorodibenzo-p-dioxins) and TCDF (Tetrachlorodibenzofurans)
- PeCDD (Pentachlorodibenzo-p-dioxins) and PeCDF (Pentachlorodibenzofurans)
- HxCDD (Hexachlorodibenzo-p-dioxins) and HxCDF (Hexachlorodibenzofurans)
- HpCDD (Heptachlorodibenzo-p-dioxins) and HpCDF (Heptachlorodibenzofurans)
- OCDD (1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin)
- OCDF (1,2,3,4,6,7,8,9-Octachlorodibenzofuran).

The laboratory performed all Quality Assurance/Quality Control (QA/QC) measures necessary to review the analytical results for this sampling event, and the Total PCDD and PCDF results met the method QA/QC criteria with no qualifications. Chemistry Services noted variability between some of the Total PCDD and PCDF results for sample W-2 and the field duplicate (W-S Dup). This variability is typical and expected for waste soil samples.

Sample results for the Total PCDD and PCDF groups were compared to the treatment standards for contaminated soils set forth in U.S. Code of Federal Regulations, 40 CFR 268.48 and 40 CFR 268.49. Waste soils with sample results exceeding the treatment standards for contaminated soils may require treatment prior to landfill disposal per USEPA regulations. However, none of the results for this event exceeded these standards.

Conclusions:

Based on technical review of the Laboratory Report, dated 3/8/2023, Chemistry Services Section determined that the Total PCDD and PCDF results for the collected samples are suitable for determining disposal. None of the results exceeded the standards, which indicates that the material tested does not contain any harmful levels of dioxins and furans compared to acceptable levels as established by EPA, and therefore appear suitable for disposal at Heritage Landfill in Roachdale, Indiana.

Attachment

