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Governor



DIVISION OF PUBLIC HEALTH

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May 2, 2017

Name  
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Dear \_\_\_\_\_,

In October and November 2015, the Department of Health Services (DHS) met with residents living near the We Energies power plant in Oak Creek who had contacted their local health department with concerns. Many of these health concerns were related to air quality impacts from coal storage and train engine exhaust. In response to the concerns of nearby residents, DHS requested air monitoring data from We Energies, who has measured particulate levels at two locations (Elm Road and 7 Mile Road) along the Union Pacific rail line since 2009 (Figure 1). DHS also requested an independent analysis of this particulate monitoring data from CDC's Agency for Toxic Substances and Disease Registry (ATSDR). *This letter summarizes ATSDR's independent review of the particulate monitoring data collected by We Energies.*

**Figure 1. Monitoring locations**



**AIR MONITORING SUMMARY**

The two particulate monitoring sites chosen by We Energies are located between their facility and residential areas to the west and south where most concerns have originated. Particulate levels were measured at the Elm Road location for nearly five years, from January 2009 to September 2013, and at the 7 Mile Road location since January 2016.

ATSDR calculated daily and annual average particulate matter (PM) levels for PM<sub>2.5</sub>, PM<sub>10</sub>, and total suspended particulates (TSP) measured at each of the We Energies air monitoring locations (see sidebar for PM definitions). Table 1 shows the maximum annual averages for each measurement in comparison to its annual EPA National Ambient Air Quality Standard (NAAQS) and World Health Organization (WHO) Guideline, if available. Table 2 shows the maximum daily average for each measurement in comparison to its daily EPA NAAQS or WHO Guideline, if available.

### What is particulate matter?

Particles can vary in size from microscopic (e.g. diesel engine exhaust) to visible (e.g. powders and sand grains). Larger particles are intercepted by nasal hairs or deposited at the back of the throat, where they can be sneezed out, coughed up, or swallowed. Smaller particles can get into the lungs and are the most concerning from a human health perspective. Regulatory standards protective of human health have been developed for particles below 10 micrometers in size (PM<sub>10</sub>) that can enter the lung, and those below 2.5 micrometers in size (PM<sub>2.5</sub>) that can get deeper into the lungs.

### What is the difference between standards and guidelines?

Particulate levels also vary over time, so standards have been developed for comparison to daily or annual averages. NAAQS levels are regulated and action will occur if levels exceeded this amount; WHO guidelines are recommended levels to ensure good health for vulnerable individuals.

**Table 1. Maximum Annual Average Particulate Levels**

*All levels measured were below standards and guidelines*

Location (years)	Particulate Size Range	Maximum Annual Average Concentration (µg/m <sup>3</sup> )	Annual NAAQS (µg/m <sup>3</sup> )	WHO Chronic Guideline (µg/m <sup>3</sup> )
Elm Road (2009 to 2013)	PM <sub>2.5</sub>	9.4	12	10
Elm Road (2009 to 2013)	PM <sub>10</sub>	14.4	NA	20
7 Mile Road (2016)	PM <sub>2.5</sub>	6.8	12	10
7 Mile Road (2016)	PM <sub>10</sub>	14.7	NA	20
7 Mile Road (2016)	TSP	16.7	NA	NA

µg/m<sup>3</sup> = micrograms per cubic meter

**Table 2. Maximum Daily Average Particulate Levels**

*Majority of measurements were below standards and guidelines*

Location (years)	Particulate Size Range	Maximum Daily Average Concentration (µg/m <sup>3</sup> )	24-hour NAAQS (µg/m <sup>3</sup> )	24-hour WHO Guideline (µg/m <sup>3</sup> )
Elm Road (2009 to 2013)	PM <sub>2.5</sub>	35.2*	35	25
Elm Road (2009 to 2013)	PM <sub>10</sub>	48.4	150	50
7 Mile Road (2016)	PM <sub>2.5</sub>	23.1	35	25
7 Mile Road (2016)	PM <sub>10</sub>	44.9	150	50
7 Mile Road (2016)	TSP	73.0	NA	NA

µg/m<sup>3</sup> = micrograms per cubic meter

\* At the Elm Road monitoring location, one daily average concentration out of 1,733 days exceeded the 24-hour EPA NAAQS for PM<sub>2.5</sub>; six days exceeded the 24-hour WHO Guideline for PM<sub>2.5</sub>.

All annual average particulate levels measured at the Elm Road and 7 Mile Road monitoring locations were below their applicable health-based standards or guidelines. The same was true for daily average particulate levels, with a few exceptions. Over nearly five years of measurements taken at the Elm Road site, there was one day with a minor exceedance of the EPA 24-hour NAAQS for PM<sub>2.5</sub> and six days with exceedances of the WHO 24-hour Guideline for PM<sub>2.5</sub>. All PM<sub>10</sub> daily average values and the remainder of the PM<sub>2.5</sub> daily average values were below their 24-hour EPA NAAQS and WHO Guideline.

ATSDR also compared particulate levels at the 7 Mile Road monitoring location with concurrent data on wind speed and direction. This analysis indicated that the coal pile and/or rail cars may contribute to the low levels of larger particulates (PM<sub>10</sub> and TSP) nearby, but there is no indication that these sources are contributing to the levels of smaller particulates (PM<sub>2.5</sub>) in the area.

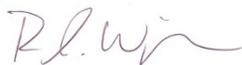
## CONCLUSIONS

Following ATSDR's independent review of the air monitoring data collected by We Energies around the perimeter of their facility since 2009, **DHS concludes that although the coal pile and rail cars may contribute to the amount of larger particulates in the air near these sources, inhalable particulates do not currently pose a human health concern to those living nearby, including sensitive individuals.**

If you have any questions regarding the information or conclusions contained in this letter, please contact me at the number or email address below.

Concerns regarding idling trains or other community issues can be addressed by Union Pacific's Response Management Communication Center: 1-888-UPRR COP, 1-888-887-7267.

Sincerely,



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