

DATE: April 10, 2020 FILE REF: BRRTS 02-16-000484

TO: Chris Saari – DNR RR/Ashland and John Sager DNR RR/Superior

FROM: Joe Graham – DNR RR/Spooner

SUBJECT: Prohibition of sheen and non-aqueous phase liquid (NAPL) in surface water, soils, sediment, and wetlands

On a recent Crawford Creek FFS project call, the U.S. EPA Great Lakes National Program Office asked if Wisconsin had a prohibition of sheen or NAPL. The purpose of this memorandum is to identify applicable Wisconsin laws and regulations that prohibit sheen and NAPL in waters and soils of the state and specifically in this case, surface water or wetlands¹. Waters of the state also includes groundwater, but it is not discussed here since DNR's authority to address groundwater contamination is adequately addressed in existing guidance.

At this site, sheen and NAPL are environmental pollution caused by the discharge of hazardous substances. Wisconsin law requires the person who discharged hazardous substances to take actions necessary to restore the environment as required by Wis. Statute ch. 292.²

Background:

Crawford Creek, an unnamed tributary to Crawford Creek, and their floodplains are contaminated by hazardous substance discharges from the former Koppers Inc. Wood-Treating Facility (the site). The Wisconsin Department of Natural Resources (WDNR) lists the site as an open case in its database of sites where environmental contamination has been reported (otherwise known as the Bureau of Remediation and Redevelopment Tracking System (BRRTS)) under BRRTS Case # 02-16-000484. Crawford Creek and the unnamed tributary are also included on Wisconsin's list of impaired waters under section 303(d) of the Clean Water Act due to pollution by creosote and polycyclic aromatic hydrocarbons (PAHs). Dioxin is also a contaminant of concern at the site.

Sheen and NAPL are hazardous and mobile. These contaminants are toxic, and a risk to environmental receptors, and being mobile represent a continuing source of contamination between environmental media and to downstream areas. They are typically indicative of a hazardous substance release and commonly described using the terms "oil," "free product," "petroleum," or other names. NAPL is a principal threat waste requiring active remediation under the National Oil and Hazardous Substance Pollution Control Plan (NCP). Wisconsin's laws and regulations prohibit the presence of oil (sheen or NAPL) in soil, sediment, surface water, and wetlands. State regulations specifically require that site

1 Wis. Adm. Code § NR 103.02 (5) defines "wetlands". Wetland environments characteristically include soil, surface water, and sediment media.

2 Wis. Statute ch. 292 defines the terms "environmental pollution," "discharge," and "hazardous substance"

investigation must include an evaluation of both sheen and NAPL, when present at a site (Wisc. Adm. Code ch. NR 716). To ensure adequate protection of human health, safety, and the environment, the potential presence of sheen and NAPL and the risk posed by these contaminants must be considered and addressed during the selection of a remedial action (Wisc. Adm. Code ch. NR 722).

Many studies have documented the presence of sheen, NAPL, and elevated contaminant concentrations in surface water, sediment, and soils at the Koppers-Crawford Creek site. These contaminants are a violation of Wisconsin's spills and water quality laws that must be addressed in a remedial action. A list of some state laws and regulations applicable to sheen and NAPL is attached (not inclusive). These are applicable or relevant and appropriate requirements (ARARs) under the NCP, and the remedial action at this site must comply with both the substantive and administrative requirements.

Attachment

Wisconsin DNR Regulations Applicable to Sheen and NAPL in Surface Waters and Wetlands

Wisconsin Statutes:

Ch. 292, Remedial Action (the “Spills” Law)

Ch. 281, Water and Sewage (“Water Quality Standards”)

Wisconsin Administrative Code (Selected excerpts):

§ NR 102.04(1)(b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

§ NR 102.04(1)(d) Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

§ NR 103.03(2)(b) Floating or submerged debris, oil or other material may not be present in amounts which may interfere with public rights or interest or which may cause significant adverse impacts to wetlands;

§ NR103.03(2)(d) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause significant adverse impacts to wetlands;

§ NR 299.02(6) “Pollutant” means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, sewage sludge, munitions, hazardous waste, hazardous substance, chemical wastes, biological materials, radioactive substance, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste.

§ NR 700.03 (22) “Free product” means a discharged hazardous substance or environmental pollution that is present in the environment as a floating or sinking non-aqueous phase liquid

Ch. NR 708 mentions “free product” in several places

§ NR 708.13 Free product removal. Responsible parties shall conduct free product removal whenever it is necessary to halt or contain the discharge of a hazardous substance or to minimize the harmful effects of the discharge to the air, lands or waters of the state. When required, free product removal shall be conducted, to the maximum extent practicable, in compliance with all of the following requirements: (1) Free product removal shall be conducted in a manner that minimizes the spread of contamination into

previously uncontaminated zones using recovery and disposal techniques appropriate to the hydrologic conditions at the site or facility, and that properly reuses or treats discharges of recovery byproducts in compliance with applicable state and federal laws. (2) Free product removal systems shall be designed to abate free product migration. (3) Any flammable products shall be handled in a safe and competent manner to prevent fires or explosions.

§ NR 716.11(3) [The purposes of the field investigation shall be to:] (d) Provide an estimate, along with all necessary supporting information, of the mass of contamination in the source area. This includes sites involving free product or where natural attenuation is considered for part of the remedy.

§ NR 716.11(5) [The field investigation shall include an evaluation of] (a) Potential pathways for migration of the contamination, including drainage improvements, utility corridors, bedrock and permeable material or soil along which vapors, free product or contaminated water may flow.

§ NR 718.03(9) "Light petroleum products" means gasoline, diesel fuel, no. 1 or no. 2 fuel oil, kerosene, aviation gasoline, jet fuel, or a mixture of 2 or more of these materials.