RR Program's Soil RCL Spreadsheet Update

June 2018 **DNR-RR-052g**

The Wisconsin DNR Remediation and Redevelopment Program (RR) has updated the numerical soil standards in the RR spreadsheet of residual contaminant levels (RCLs). The RCLs were determined using the recently-updated U.S. EPA RSL web-calculator. This document provides a summary of changes to the direct-contact RCLs (DC-RCLs) that are now in the June 2018 spreadsheet. Compared to the previous December 2017 spreadsheet:

1.) No new chemical was added (Table 1).
2.) One chemical was removed (Table 2).
3.) Several pesticides had their direct-contact RCLs revised (Table 3).
4.) Chlordane's groundwater-protective RCL was added in the spreadsheet (Table 4).

The last section of this document has the exposure parameter values used to calculate the RCLs. All U.S. EPA exposure defaults were used, with the exception of selecting: A hazard quotient of 1, and the climatic zone of Chicago, IL. The updated RCLs may affect the closure decision for any current or incoming closure requests. Under s. NR 724.19, Wis. Adm. Code, responsible parties are required to comply with new or revised standards if the DNR determines that compliance to a more stringent revised standard is necessary to ensure that the remedial action will be protective of public health, safety, welfare or the environment.

Table 1: List of New Chemicals Added to the RR's Spreadsheet of RCLs (June 2018) - None

(For the June 2018 update, no new CAS was added since December 2017.)

Table 2: List of Chemicals Removed from the RR's Spreadsheet of RCLs (June 2018)

(For the June 2018 update, 1 chemical was removed since December 2017.)

Contaminant	Removed CAS Number
Cypermethrin	52315-07-8

Table 3: List of Direct-Contact RCLs that Changed in RR's Spreadsheet (updated June 2018)

Nine (9) chemicals have updated toxicity values, so their DC-RCLs changed.

Bold chemical name indicates its DC-RCLs have decreased.
Red values indicates RCL has decreased by a factor of 5 or more.

Contaminant	Old Name (Blank if same in December 2017)	CAS Number	Volatile? Dec. 2017	Volatile? June 2018	Non-Industrial DC-RCL (mg/kg) Old	Non-Industrial DC-RCL (mg/kg) Current	Non-Industrial DC-RCL (mg/kg) Basis	Industrial DC-RCL (mg/kg) Old	Industrial DC-RCL (mg/kg) Current	Industrial DC-RCL (mg/kg) Basis
Bromoxynil Octanoate		1689-99-2	Yes	Yes	1,170.	6.75	ca	17,500.	31.8	ca
Chlorsulfuron		64902-72-3	No	No	1,260.	3,160.	nc	16,400.	41,000.	nc
Cyromazine		66215-27-8	No	No	948.	31,600.	nc	12,300.	100,000.	ceiling
Dicrotophos		141-66-2	No	No	4.42	1.9	nc	57.4	24.6	nc
Flurprimidol		56425-91-3	No	No	948.	2,530.	nc	12,300.	32,800.	nc
Hydrazine		302-01-2	Yes	Yes	0.232	0.044	ca	1.09	0.193	ca
Pendimethalin		40487-42-1	Yes	No	1,900.	19,000.	nc	24,600.	100,000.	ceiling
Pirimiphos, Methyl		29232-93-7	Yes	No	4.21	4.42	nc	54.7	57.4	nc
Propargite		2312-35-8	Yes	No	16.6	2.83	ca	70.3	12.	ca

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Table 4: List of Chemical Whose Groundwater-Protective RCLs Changed (June 2018)

For the June 2018 update, Chlordane was added. Note that here its CAS# (57-74-9 same as in NR 140) is different from its CAS# (12789-03-6) in the DC-RCL worksheets. GW-RCLs have NR 140 CAS#s, while DC-RCLs have CAS#s the same as those in U.S. EPA RSL tables.

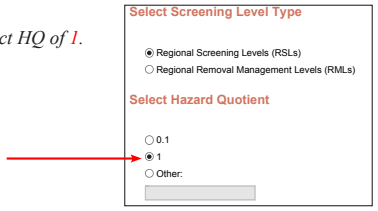
		GW-RCL (mg/kg)	
NR140 Substance	NR 140 CAS	Old	New
Chlordane	57-74-9		0.2710

Exposure Parameter Values Used in Determining DC-RCLs

Update to RR-890 and RCL Spreadsheet (June 2018)

To calculate DC-RCLs, the default hazard quotient and climatic zone need to be changed in the U.S. EPA RSL web-calculator.

Select HQ of 1.



In October 2016, the Wisconsin Department of Health Services recommended using the default exposure values in the U.S. EPA RSL website when calculating soil RCLs.

This means that the RSL web-calculator exposure defaults (shown in the rightmost column below) need **not** be changed even if they are not the same as what are in NR 720.

	NR 720 RCL Defaults *(Replaced by values on the right)*	Web-Calculator Defaults
Non-Industrial Setting		
BW-Adult (kg):	*70*	***80***
Exposure Duration (yr):	*30*	***26*** *(= 6 as child + 20 as adult)*
SA-Child (cm^2/d):	*2800*	***2373***
SA-Adult (cm^2/d):	*5700*	***6032***
T (VF Aver. time):	*30 yr = 9.5e8 s*	*26 yr = **8.2e8** s*
Industrial Setting		
BW-Adult (kg):	*70*	***80***
ED (yr):	*25*	*25*
AFw:	*0.2*	***0.12***
SA-Adult (cm^2/d):	*3300*	***3527***
T (VF Aver. time):	*30 yr = 9.5e8 s*	*26 yr = **8.2e8** s*

Select "Chicago, IL" to get acceptable values of PEF and VF necessary in the calculations in both non-industrial and industrial settings.