

ILLINOIS POLLUTION CONTROL BOARD  
December 15, 2005

IN THE MATTER OF: )  
)  
PETITION OF WASTE MANAGEMENT OF ) AS 05-7  
ILLINOIS, INC. FOR RCRA WASTE ) (Adjusted Standard - Land)  
DELISTING UNDER 35 ILL. ADM. CODE )  
720.122 FOR SOLID TREATMENT )  
RESIDUAL FOR CID RECYCLING AND )  
DISPOSAL FACILITY BIOLOGICAL )  
LIQUID TREATMENT CENTER )

OPINION AND ORDER OF THE BOARD (by N.J. Melas):

On June 9, 2005, Waste Management of Illinois, Inc. (WMII) filed a petition for an adjusted standard from the Board's hazardous waste regulations. WMII seeks a Resource Conservation and Recovery Act (RCRA) hazardous waste delisting for lime-conditioned filter cake from the treatment of hazardous and non-hazardous leachates and wastewaters at WMII's facility in Calumet City, Cook County. For the reasons below, the Board denies WMII's request on the merits.

In this opinion, the Board first addresses procedural matters before providing background on WMII's request. Next, the Board discusses the Illinois Environmental Protection Agency's recommendation and WMII's response. The Board then analyzes WMII's petition and sets forth the Board's reasons for denying the petition.

**PROCEDURAL MATTERS**

WMII previously petitioned the Board for a RCRA hazardous waste delisting of the same waste on January 29, 2005, docketed as Petition of Waste Management of Illinois, Inc. for RCRA Waste Delisting Under 35 Ill. Adm. Code 720.122 for Solid Treatment Residual for CID Recycling and Disposal Facility Biological Liquid Treatment Center, AS 05-3. However, the Board did not accept the petition in AS 05-3 because of several procedural deficiencies in the petition.

On June 9, 2005, WMII filed the adjusted standard petition that opened this docket, AS 05-7. WMII requests leave to incorporate the document entitled "Waste Management of Illinois, Inc., CID Recycling and Disposal Facility, Biological Liquid Treatment Center, Treatment Residual Delisting Request, Information Submittal," (Information Submittal) filed in AS 05-3, into this docket. The Board grants WMII's request, waives separate filing, and accepts the Information Submittal as part of the petition.

In addition to waiving hearing on the petition, WMII's June 9, 2005 petition requested expedited consideration. The Board grants the motion and has reviewed the entire petition as expeditiously as the Board's resources have allowed.

On August 1, 2005, the Illinois Environmental Protection Agency (Agency) filed its recommendation that the Board deny the adjusted standard. On August 16, 2005, WMII responded to the Agency's recommendation.

Section 28.1 of the Act (415 ILCS 5/28.1 (2004)) and 35 Ill. Adm. Code 104.408 require publication of a notice of an adjusted standard proceeding in a newspaper of general circulation in the area affected by the petitioner's activity. The notice must be published within 14 days of filing a petition for an adjusted standard with the Board. *See* 35 Ill. Adm. Code 104.408(a). As required by 35 Ill. Adm. Code 104.410, the petitioners timely filed a certificate of publication with the Board, on June 23, 2005, indicating that notice of the petition was published in *The Daily Southtown* on June 11, 2005. Filing singly, WMII also properly served the Agency (35 Ill. Adm. Code 104.402) and the USEPA (35 Ill. Adm. Code 720.122(n)(1)).

In its recommendation, the Agency noted that the petition did not contain a signed certification statement as required by 35 Ill. Adm. Code 720.122(i)(12). However, on August 18, 2005, WMII attempted to remedy that deficiency by filing a motion for leave to submit an executed signature page. The Board grants WMII's motion and accepts the signed certification statement.

### **BACKGROUND**

WMII operates the CID Recycling and Disposal Facility (CID) located at 138th Street and I-94 in Calumet City, Illinois. Pet. at 1. The CID complex includes: (a) landfills for solid, special and hazardous wastes; (b) soil biological treatment and recovery; (c) non-hazardous liquid and sludge solidification; and (d) leachate and wastewater treatment at the Biological Liquid Treatment Center (BLTC). *Id.* The treatment process at the BLTC yields waste solids and residuals, including a lime-conditioned filter cake (WMII refers to the lime-conditioned filter cake as "BLTC sludge").

WMII claims that the actual characteristics of the BLTC sludge do not exhibit the characteristics of a hazardous waste. Therefore, according to WMII, a RCRA waste delisting of BLTC sludge would allow it to manage the waste as a non-hazardous waste.

To effectuate this goal, WMII seeks an adjusted standard from Subpart D of 35 Ill. Adm. Code 721 for the BLTC sludge generated from the treatment of hazardous and non-hazardous leachate and wastewater at the BLTC. The BLTC sludge is not a listed waste or a mixture of non-hazardous and listed hazardous wastes. Rather the BLTC sludge is considered a hazardous waste because it is generated from the treatment of listed hazardous and non-hazardous wastes, pursuant to Section 721.03(e) of the Board's hazardous waste identification and listing regulations.

### **REGULATORY FRAMEWORK**

Section 22.4 of the Act requires the Board to adopt regulations that are identical in substance to federal RCRA regulations. 415 ILCS 5/22.4(a) (2004). The Board's regulations identifying and listing hazardous wastes are found in 35 Ill. Adm. Code 721.

In accordance with Section 28.1(a) of the Act, persons seeking a RCRA waste delisting must justify the request consistent with Section 27(a). Section 27(a) provides:

In promulgating regulations under this Act, the Board shall take into account the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution. 415 ILCS 5/27(a) (2004).

Pursuant Section 28.1(b) of the Act, the Board has further specified the level of justification for hazardous waste delistings in Section 720.122 of the Board's regulations. 35 Ill. Adm. Code 720.122. Subsection 720.122(n) states that delistings that have not yet been adopted by the USEPA can be proposed to the Board by way of an adjusted standard pursuant to Sections 28.1 of the Act and Section 104, Subpart D. Subsection 720.122(n) also states that the justification for the adjusted standard "is as specified in subsections (a) through (g) of this Section, as applicable to the waste in question." 35 Ill. Adm. Code 720.122(n).

WMII states that the BLTC sludge is not itself a listed hazardous waste, but rather is generated from the treatment of one or more listed hazardous and non-hazardous wastes, as provided by Section 721.103(e). Information Submittal at 5. Therefore, pursuant to Section 720.122(b), the petitioner must make the same demonstration as required by subsection (a). Under Section 720.122, the petitioner must demonstrate: (1) the petitioned waste "does not meet any of the criteria under which the waste was listed as a hazardous . . . waste" (35 Ill. Adm. Code 720.122(a)(1), (c)(1), (d)(1), and (e)(1)); (2) the petitioned waste "does not exhibit the relevant characteristic for which the waste was listed, or . . . any of the other characteristics (35 Ill. Adm. Code 720.122(c)(1), (d)(3), and (e)(3)); and (3) that if "factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that such factors do not warrant retaining the waste as a hazardous waste" (35 Ill. Adm. Code 720.122(c)(2), (d)(2), and (e)(2)).

Based on the waste codes assigned to the BLTC sludge in the past, the waste characteristics of concern are *ignitability* and *toxicity*. Information Submittal, Vol. 1 at 42.

The Board's standard of decision for requests to delist hazardous wastes listed for hazardous waste characteristics is found at Section 720.122. That section, adopted identically in substance to the federal regulation 40 C.F.R. 260.22, provides:

Based on a complete petition, the Board will determine, if it has a reasonable basis to believe that factors (including additional constituents) other than those for which the waste was listed could cause the waste to be a hazardous waste, that

such factors do not warrant retaining the waste as a hazardous waste.  
720.122(a)(3).

A Board determination regarding a waste listed for ignitibility, corrosivity, reactivity, or toxicity characteristics will be made “by reliance on, and in a manner consistent with, ‘EPA RCRA Delisting Program—Guidance Manual for the Petitioner’” (Guidance Manual). 35 Ill. Adm. Code 720.122(c).

Those petitioning for the delisting of a toxic waste must use “the appropriate test methods prescribed in ‘Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,’ USEPA Publication SW-846.” 35 Ill. Adm. Code 720.122(d)(1)(A). Alternatively, a petitioner may choose to demonstrate that the petitioned waste, if listed for toxicity, does not meet the criterion of 35 Ill. Adm. Code 721.111(a)(3) when considering the factors used in 35 Ill. Adm. Code 721.111(a)(3)(A) through (a)(3)(K) under which the waste was listed as hazardous. 35 Ill. Adm. Code 720.122(d)(1)(B).

### **WMII’S PETITION**

In support of the petition, WMII performed risk assessment modeling for the treatment residual. According to WMII, the modeling indicates that when the petitioned waste is disposed in a lined Subtitle D Landfill, the carcinogenic risk and the non-carcinogenic hazard of the petitioned waste are within acceptable ranges. Pet. at 8. WMII presents the results of its modeling under Subtitle D Landfill conditions, showing a groundwater pathway carcinogenic risk of  $1.91 \times 10^{-5}$  and a non-carcinogenic hazard index (HI) of 0.02. Information Submittal, Table 14.

### **Proposed Adjusted Standard Language**

Based on the risk assessment modeling, WMII proposed the following adjusted standard language:

The treatment residual generated at the CID Recycling and Disposal Facility, Biological Liquid Treatment Center, is not considered to be a hazardous waste as defined in 35 Ill. Adm. Code 721, when managed in an Illinois EPA permitted RCRA Subtitle D landfill unit in accordance with the following conditions:

1. Samples of the treatment residual shall be analyzed and evaluated to ensure that it does not exhibit the following:
  - Hazardous waste characteristic of ignitibility as identified in 35 IAC 721.121 (409 CFR 261.21);
  - Hazardous waste characteristic of corrosivity as defined in 35 IAC 721.122 (40 CFR 261.22);
  - Hazardous waste characteristic of reactivity as identified in 35 IAC 721.123 (40 CFR 261.23);

- Hazardous waste characteristic of toxicity (“TCLP Hazard Criteria”) as found in 35 IAC 721.124 (40 CFR 261.24);
  - A TCLP concentration for Nitrosodiethylamine greater than 0.0138 mg/l;
  - A TCLP concentration for Nitrosodimethylamine greater than 0.011 mg/l.
2. Samples of the treatment residual shall be representative of the waste and shall be analyzed in accordance with the following schedule:

<u>Number of Waste Shipments per Year</u>	<u>Number of Samples Analyzed</u>
1-4 Shipments of Waste per Year	1 Confirmation Test Per Year
5-12 Shipments of Waste per Year	2 Confirmation Tests Per Year
13-24 Shipments of Waste per Year	3 Confirmation Tests Per Year
>24 Shipments of Waste per Year	4 Confirmation Tests Per Year

If a sample does not meet the adjusted standard, it must be managed as a hazardous waste (in accordance with 35 Ill. Adm. Code 721), or reprocessed and retested. If a sample does not meet the adjusted standard, the next five (5) boxes of treatment residual will be sampled and analyzed in accordance with Condition 1 above. Each box of treatment residual must be in compliance with the adjusted standard, before the confirmation sampling schedule (Condition 2) may be resumed.

Pet. at 6.

### AGENCY RECOMMENDATION

The Agency recommended denying WMII’s petition, stating it does not provide the required level of justification. Rec. at 3; citing 35 Ill. Adm. Code 104.406(h). Both the Agency and WMII agree that the petitioner must satisfy three criteria, pursuant to Section 720.122. The Agency agrees that the petition meets the first two criteria, but argues that the petition fails to meet the third criterion: that the petitioned waste not exhibit any other factors that could cause the waste to be a hazardous waste. To demonstrate that the petitioned waste meets the third criterion, the Agency states that WMII performed risk assessment modeling, using the Delisting Risk Assessment Software (DRAS)<sup>1</sup>, in accordance with the “EPA RCRA Delisting Program--Guidance Manual for the Petitioner.” According to the Agency, however, there were problems with the methodology used.

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<sup>1</sup> The DRAS is a software program that calculates the potential risks associated with disposing a given waste stream to a landfill or surface impoundment. For a given waste stream, the DRAS calculates both the waste's aggregate risks and also back-calculates each waste constituent's maximum allowable waste constituent concentration permissible for delisting (the DRAS can be found at: [http://www.epa.gov/earth1r6/6pd/rcra\\_c/pd-o/midlo.htm#risk](http://www.epa.gov/earth1r6/6pd/rcra_c/pd-o/midlo.htm#risk)).

First, the Agency contends that WMII used a reference document with very high background levels of constituents, and then based on those figures, excluded several metal parameters from calculation of the HI. Rec. at 4. The Agency states that the background soil levels found in the United States Geological Survey document, dated 1975, are significantly higher than background concentrations found, for example, in the Board's rules regarding the Tiered Approach to Corrective Action Objectives (TACO) at 35 Ill. Adm. Code 742, Appendix A, Table G. *Id.* Further, the Agency states that all constituents should be included in the HI calculation regardless of whether the parameter is above or below background levels because all constituents contribute to the overall risk of the waste.

Of particular concern to the Agency is the exclusion of arsenic. WMII used 97 milligrams per kilogram (mg/kg) as the background value for arsenic. Based on that value, WMII excluded the arsenic parameter from the HI calculation, reasoning that the concentration of 80 mg/kg arsenic detected in the petitioned waste fell below background levels. In comparison, the Agency states that TACO background numbers provide that arsenic typically occurs in Illinois soils at a concentration ranging from 11.3 mg/kg to 13 mg/kg. The Agency states that arsenic should have been included in the HI calculation, and "the practice of excluding a constituent because it is 'background' is not sound practice from a risk-assessment standpoint." Rec. at 5.

Second, the Agency disputes some of the methods WMII used to calculate the aggregate carcinogenic risk created by the petitioned waste. Rec. at 5. The Agency notes that WMII refers to an acceptable carcinogenic risk range of  $10^{-4}$  to  $10^{-6}$ , and that WMII concludes in the petition that the results,  $1.53 \times 10^{-4}$  (groundwater) and  $1.83 \times 10^{-6}$  (surface), are acceptable. Rec. at 5. The Agency states, "for the purposes of delisting hazardous waste, Illinois EPA and USEPA have traditionally considered a cancer risk of  $10^{-6}$  to be the maximum acceptable risk." Rec. at 5. The Agency contends that it conveyed this as a concern to WMII, and that WMII responded by applying another model, POLLUTE v.6, to model a Subtitle D disposal scenario, rather than the unlined landfill scenario assumed by DRAS. The results, which were the modeled concentrations directly below the liner from the POLLUTE v.6 model, were then input into DRAS. Even by using this model, the aggregate carcinogenic risk predicted was  $1.91 \times 10^{-6}$ , which is still in excess of the  $1 \times 10^{-6}$  cutoff traditionally accepted as the maximum acceptable risk from hazardous waste. Rec. at 5.

Regarding the other Section 104.406 factors, the Agency states the Board should deny the proposed adjusted standard in its present form because WMII has not met the required level of justification. Rec. at 3; citing 35 Ill. Adm. Code 104.406(f). Further, the Agency contends WMII has not presented adequate and complete risk assessment that demonstrates the representative quantitative and qualitative impact on the environment. Rec. at 3; citing 35 Ill. Adm. Code 104.406(g). The Agency does not dispute the remaining Section 104.406 factors.

The Agency contends that WMII has failed to adequately prove at least three of the Section 28.1(c) factors. Rec. at 6. However, the Board does not further discuss the Agency's arguments under Section 28.1(c). Those factors must be addressed in a petition "if a regulation of general applicability does not specify a level of justification." 415 ILCS 5/28.1(c). As

discussed above, the Board has specified the level of justification required for RCRA waste delistings in Section 720.122 of the Board's rules.

### **WMII RESPONSE**

In response, WMII defends the methodology it used to perform the risk assessment. WMII states that it used the results from the POLLUTE v.6 model as input data for the to account for the presence of a liner system because, according to WMII, the delisted waste must be disposed of in a Subtitle D landfill. Resp. at 2. Using the approach described above, WMII states the HQ for arsenic is  $7.94 \times 10^{-17}$ . WMII further states that if the constituents previously omitted from the HI calculation were included, the HI value would be 0.435, falling below the 1.0 level that both the Agency and the USEPA have traditionally accepted for delisting. Resp. at 2-3.

WMII also reiterates the basis for its calculation of the aggregate carcinogenic risk created by the petitioned waste. WMII states that the document, "EPA RCRA Delisting Program-- Guidance Manual for the Petitioner," provides that for single batch delistings, a target risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  and a hazard index of 1 apply. Resp. at 3. WMII states that in its risk and hazard assessment only two constituents had a carcinogenic risk greater than  $10^{-6}$ . Through back calculations, WMII states it has determined that maximum allowable concentrations below a  $10^{-6}$  risk are not analytically achievable. Resp. at 3-4.

For these reasons, WMII argues it has met the third criterion of Section 720.122. Rec. at 4; citing 35 Ill. Adm. Code 720.122.

### **BOARD ANALYSIS**

For the reasons below,, the Board finds that WMII has not adequately addressed certain proof requirements under Section 720.122, the Board's waste delisting regulation. Under Section 720.122(c), the Board's determination must be made "by reliance on, and in a manner consistent with, 'EPA RCRA Delisting Program—Guidance Manual for the Petitioner.'" 35 Ill. Adm. Code 720.122(c). In this part of the opinion, the Board identifies how WMII's petition is inconsistent with the Guidance Manual and otherwise fails to meet the required level of justification for receiving the requested adjusted standard. .

#### **Acceptable Cancer Risk Levels**

The Board agrees with the Agency that a cancer risk of  $1 \times 10^{-6}$  is the maximum acceptable risk by State standards, noting this applies to individual constituents and multiple chemicals that are not similarly acting. See Rec. at 5. As WMII notes, the RCRA Delisting Technical Support Document (TSD)<sup>2</sup> states the USEPA's established range of generally

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<sup>2</sup> The Technical Support Document (EPA906-D-98-001) describes the supporting technical methodology employed by the DRAS program to perform the risk assessment.

acceptable risks for known or suspected carcinogens is  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ . TSD at 4-3. Nonetheless, while other states may use greater risk values such as  $10^{-5}$  in developing remediation objectives, Illinois has generally established the one in a million risk level for remediation objectives for individual contaminants. *See* 35 Ill. Adm. Code Part 742; Tiered Approach to Corrective Action Objectives (T.A.C.O.), 35 Ill. Adm. Code 742, R97-12, 12/3/96 Tr. at 354-58. Exceptions are noted in that same section. 35 Ill. Adm. Code 742, App. A, Table H, Column 3.

The Board finds that, in accordance with State policy, WMII must use the  $1 \times 10^{-6}$  risk concentration for the risk assessment of individual contaminants (35 Ill. Adm. Code 742, App. A, Table H, Column 3). If multiple similar-acting chemicals with risks each below  $1 \times 10^{-6}$  are present, the potential exists for the cumulative risk to be greater than  $1 \times 10^{-6}$ . For multiple similar-acting chemicals, the evaluation of 35 Ill. Adm. Code 620.615 is considered satisfied if the cumulative risk does not exceed  $1 \times 10^{-4}$ . 35 Ill. Adm. Code 742.805(d).

### **One-Time Delisting v. Multiyear Delisting**

WMII seeks a multiyear, or multiple-batch, delisting of its waste so that the delisting will apply to waste that will be generated in the future. Information Submittal, at 7. Delisting petitioners also have the option of requesting a one-time delisting or single-batch exclusion to apply to discrete volumes of waste that were generated in the past. Guidance Manual at 7-8, App. H, Att. 5; TSD at 1-7, 1-8. Because future waste may exhibit variability in constituents and contaminant levels, the demonstration required for one-time delistings, and multiyear delistings differ.

WMII used DRAS in support of its petition. DRAS performs two levels of analyses: screening-level analyses and cumulative risk and hazard level analyses. According to the TSD, multiyear delistings rely on the screening level analyses to “compute chemical specific exit values or ‘delisting levels’ . . .” TSD at 1-8,1-9. These levels are then used to establish monitoring concentrations that must be met by each batch of waste to be managed under the adjusted standard. For a one-time, single-batch delisting, the cumulative risk and hazard analyses are used and the results may be used in lieu of delisting levels. TSD at 1-8,1-9.

WMII used DRAS to present the cumulative risk appropriate for a one-time delisting and did not propose sampling each batch of waste in the adjusted standard language. The Board finds that WMII’s petition failed in these respects.

### **Delisting Levels**

Delisting levels are the maximum allowable concentrations of hazardous constituents that will not exceed the target risk level for that compound. *See* User’s Guide for the USEPA Region 6 DRAS, April 2002 (DRAS User Guide).<sup>3</sup> Since WMII requests a multiyear delisting, constituent-specific delisting levels must be derived for all constituents of concern (COC) for the

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<sup>3</sup> The DRAS User Guide (EPA906-D-98-001) describes how to use the DRAS and provides minimum and recommended system requirements.



adjusted standard language. These would be used to establish monitoring concentrations that must be met by each batch of waste to be managed under the adjusted standard.

Although WMII provides the delisting levels calculated by DRAS using a  $1 \times 10^{-6}$  risk factor (contained in the petition under Information Submittal, Vol. 1, Tab. 9), WMII does not include the specific delisting levels (mg/kg and mg/L) in the adjusted standard language. WMII states it did not include delisting levels in the adjusted standard language because USEPA personnel indicated that DRAS-Version 2 may contain errors in this area. Information Submittal, Vol. 1 at 45.

The Board finds that it is necessary that adjusted standard language include delisting levels in adjusted standard language for multiyear delistings so that the Agency can verify on-going compliance. Should WMII file a new petition for an adjusted standard, WMII must include the calculated maximum allowable concentrations in the adjusted standard language for all COCs whether WMII chooses to use DRAS-Version 2, or to perform the calculations separately. All of the required equations are provided in the TSD.

### **Constituents of Concern**

The Guidance Manual directs petitioners to demonstrate that constituents of concern are not present in the petitioned waste at hazardous levels based on “analytical data, mass balance demonstrations, or other appropriate information.” Guidance Manual at 26. For the initial evaluation, the COCs are those listed in 40 CFR 261, App. VIII as well as acetone, ethylbenzene, isophorone, 4-methyl-2-pentanone, styrene, and xylenes (total). Guidance Manual at 26, 30-31. The Guidance Manual states that after evaluating the initial list, “a final list of constituents can be prepared to include only the metals and organics from the 40 CFR 261.24 Toxicity Characteristics plus all additional constituents that were detected . . . .” Guidance Manual, App. H, Att. 2. WMII’s initial list of COCs addresses the 40 CFR 264, App. IX contaminants, as well as dioxins and furans. However, the Board was not able to locate the analysis, mass balance, or information pertaining to Saccharin in the petition, which is one of the bases for the hazardous waste listing.

WMII’s final list of COCs in the adjusted standard language includes only the contaminants listed in 40 CFR 261.24 plus Nitrosodiethylamine and Nitrosodimethylamine. WMII’s final list of constituents must include the metals and organics from the 40 C.F.R. 261.24 Toxicity Characteristics list plus all additional constituents that were detected. *See* Guidance Manual, App. H, Att. 2. This final list will comprise the monitoring parameters to determine whether each waste load meets the requirements for the exclusion.

WMII is seeking a multiyear delisting. The Board finds that WMII failed to include total constituent and TCLP testing for all constituents on the final COC list in its proposed adjusted standard language. For this reason, WMII’s final COC list inconsistent with the requirements of the Guidance Manual. If, in a new petition, WMII seeks to narrow the monitoring requirements to include fewer constituents than are on the final COC list, then WMII must provide USEPA policy or examples where USEPA has previously approved an abbreviated list for compliance monitoring.

## **Background Levels**

The Board disagrees with WMII's approach of excluding "naturally occurring compounds" from its hazard index calculation. WMII excluded compounds found at concentrations that fell within the range of background concentrations detected in the United States based on a United States Geological Society paper dated 1975. Information Submittal, at 46.

Rather the Board is persuaded by the Agency's argument that "regardless of whether the parameter is above or below naturally occurring levels, it does contribute to the overall risk of the waste." Rec. at 5. While not binding, USEPA Guidance states "screening values [used in risk assessments] should be based on contaminant levels associated with ecological effects, instead of area or regional background levels." Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment, USEPA 2001 (this document can be found at: <http://www.epa.gov/region4/waste/ots/ecolbul.htm>).<sup>4</sup>

The Board finds that WMII improperly excluded the risk and hazard contribution from all naturally occurring compounds. If WMII chooses to pursue the approach of excluding naturally occurring compounds that fall below background levels in a new petition, WMII must support its position by USEPA guidance or examples of RCRA hazardous waste delistings where the USEPA has allowed the exclusion of compounds considered as background concentrations from the risk assessment.

## **Landfill Modeling**

The Board also disagrees with WMII's use of the POLLUTE v.6 model to derive constituent levels that were then used as input for DRAS. As explained by WMII, the POLLUTE v.6 model predicts the impact a landfill liner or other management system might have on the concentrations of contaminants from the petitioned waste. *See* Information Submittal at 47.

However, the USEPA historically considers disposal in an unlined landfill representative of the worst-case management scenario for waste. *See* National Policy for Hazardous Waste Delistings—, Elizabeth A. Cotsworth, USEPA Office of Solid Waste (Jul. 1, 1998); *see also* Guidance Manual, at 12-13. This is because once a waste is delisted, the Agency loses control of how a waste may subsequently be managed. *Id.* Further, the National Policy for Hazardous Waste Delistings advises, "Regions should not conditionally delist a waste based on consideration of . . . specific landfill designs (e.g., liners, or covers)." *Id.*

In fact, the DRAS<sup>5</sup> has a model that accounts for dilution and attenuation already built into it. According to the TSD, the USEPA Composite Model for Leachate Migrations With

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<sup>4</sup> Risk Assessment Guidance for Superfund (RAGS).

<sup>5</sup> As discussed above, the DRAS is used, in part, to perform an assessment of the total carcinogenic risk and non-carcinogenic hazard associated with the disposal of the petitioned waste.

Transformation Products (EPACMTP) is the model used by DRAS to simulate the migration and dilution of contaminants beneath a landfill. Having used the POLLUTE v.6 model in addition to the EPACMTP model that is already part of DRAS, WMII accounted for contaminant dilution and attenuation twice.

The Board finds that the application of the POLLUTE v.6 model to simulate a lined landfill to derive input values for DRAS is not consistent with the Guidance Manual. In a new petition, WMII may either: (1) provide support that the USEPA policy on the appropriate fate and transport model has changed; or (2) propose a risk and hazard analysis different from DRAS. While having no bearing on the risk and hazard analysis, WMII may also propose adjusted standard language that would condition the delisting on disposal of the petitioned waste, for example, only in a lined landfill.

### **20x Factor**

The Board finds WMII incorrectly used a “20x factor” to estimate TCLP values in calculating the risk for constituents where either no analysis was done or where values were less than the detection limits. Information Submittal, at 43, Tables 11 and 14.

USEPA guidance provides that levels of all constituents potentially present in the waste should be quantitated either by analytical testing or by mass balance demonstrations. Guidance Manual at 31. A review of the Information Submittal demonstrates that all but 2 of the 26 constituents where the 20x factor was used had reportable detection limits that could have been used instead of the 20x factor.

Further, DRAS already accounts for lower risk and hazard values when constituents are reported below detection limits. A 50% factor is built into the DRAS model.

The Board finds that WMII erred in applying the 20x factor in performing the risk assessment calculations. If WMII chooses to pursue the approach of applying any estimation methods in a new petition, WMII may provide justification for any methods used beyond those already accounted for in the DRAS.

### **Miscellaneous**

This section identifies other shortcomings of WMII’s petition.

**Risk Assessment for Lead.** DRAS does not produce results for lead because toxicity factors used in DRAS are not available for lead, but lead was detected in the petitioned waste. TSD at 4-15. USEPA recommends that lead be assessed based on established, medium-specific, health-based levels. TSD at 4-15. WMII failed to address lead separately in its risk assessment.

**Risk Assessment for Dioxins and Furans.** Various forms of dioxins and furans were detected in the petitioned waste. Information Submittal, Vol. 1, Tables 11 and 14. DRAS assesses the collective risk of the various forms of dioxins and furans on the basis of their toxicity relative to a single dioxin, identified as 2,3,7,8-TCDD. Petitioners must use a toxicity

equivalency quotient (TEQ) to arrive at this value. Guidance on how to do this is provided in the TSD. TSD at 4-16. WMII failed to include the TEQ in the risk assessment. The Board finds that WMII erred by not including the TEQ concentration in terms of 2,3,7,8-TCDD in the risk assessment.

**Groundwater Monitoring.** WMII failed to address groundwater monitoring in its petition. The Board finds that WMII erred by not addressing groundwater monitoring or, alternatively, providing justification for why the information is not relevant in a detailed discussion in the petition. *See* Guidance Manual at 13, App. A, Part 6.

**Listing Criteria.** The petitioned waste is listed for various waste codes, one of which is U202 Saccharin and salts. Information Submittal, at 41. The Board finds that WMII failed to demonstrate that the petitioned waste no longer meets the saccharin criteria for which it was listed.

**Total Waste Volume and Active Life.** In calculating the risk and hazard levels, WMII entered 1,000 cubic yards (yd<sup>3</sup>) as the total volume of waste and 20 years as the active life of waste management as parameters into DRAS calculations. Information Submittal, Att. 9. However, the petition indicates that WMII generates an average annual volume of 733,200 pounds of petitioned waste (where 30,000 pounds is equal to 30 yd<sup>3</sup>). Pet. at 5. Over 20 years, this equals approximately 14,660 yd<sup>3</sup>, rather than 1,000 yd<sup>3</sup>. Since DRAS computes a dilution attenuation factor (DAF), which is a function of the waste volume, an accurate prediction of the total life waste volume is essential in calculating the delisting levels. TSD at 1-6, 1-7.

The Board finds that WMII failed to use the input parameters (and, consequently, the calculated risk and hazard levels) representative of the total waste volume. In fact, WMII's use of a reduced waste volume in calculating risk and hazard levels conflicts with WMII's prediction that it may increase treatment capacity at the facility in the future. Information Submittal at 51-52. Because derived delisting levels are dependent on the total life waste volume, delistings can be limited to a specified number of years.

**Data Entry Errors.** DRAS requires that petitioners use the maximum constituent concentration values as input parameters. DRAS User's Guide at 3. A comparison of the laboratory data (Information Submittal, Vol. 2) and the TCLP and total constituent values used (Information Submittal, Vol. 1, Table 11) reveal that some of the values used as parameters are not the maximum detected values, or were entered incorrectly. The Board finds that WMII failed to use all of the maximum values found in the lab data as the DRAS input values.

## **CONCLUSION**

The Board finds that WMII's request for a RCRA waste delisting of lime-conditioned filter cake does not meet the required level of justification. As discussed above, WMII failed, for example, to demonstrate that the petitioned waste does not exhibit any factors (including additional constituents) that warrant retaining the waste as a hazardous waste. The Board has granted the petitioner's motion for expedited review and reviewed the petition as expeditiously as the Board's resources have allowed.

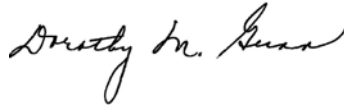
The Board accordingly denies WMII's petition on the merits and closes the docket.

This opinion constitutes the Board's findings of fact and conclusions of law.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2005); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on December 15, 2005, by a vote of 4-0.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board