

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-SFUND-2010-1086; FRL –]

Potential Addition of Vapor Intrusion Component to the Hazard Ranking System

AGENCY: Environmental Protection Agency (EPA)

ACTION: Notice of Opportunity for Public Input

SUMMARY: The Environmental Protection Agency (“EPA”) is soliciting stakeholder input on whether to include a vapor intrusion component to the Hazard Ranking System (“HRS”). The HRS is the principal mechanism EPA uses to place sites on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL). This potential addition would allow the HRS to directly consider the human exposure to contaminants that enter building structures through the subsurface environment and thus, enabling sites with vapor intrusion contamination to be evaluated for placement on the NPL. EPA is accepting public feedback on specific topics related to the potential HRS revision (see SUPPLEMENTARY INFORMATION section of this Notice), and will consider information gathered during this comment period, as well as input from three public listening sessions before making a decision on whether to issue a proposed rulemaking to add a vapor intrusion component to the HRS. The Agency is requesting comments only regarding this potential addition to the HRS. The Agency is not considering changes to the remainder of the HRS.

DATES: Comments on the topics identified in the **SUPPLEMENTARY INFORMATION** section of this notice must be submitted (postmarked) on or before **[INSERT DATE 75 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Submit comments on the topics identified in the **SUPPLEMENTARY INFORMATION** section of this notice, identified by Docket ID No. EPA-HQ-SFUND-2010-1086, by one of the following methods:

- *http://www.regulations.gov*: Follow the on-line instructions for submitting comments.

- *E-mail:* superfund.docket@epa.gov
- *Fax:* (202) 566–9744
- *Mail:* U.S. Environmental Protection Agency; EPA Docket Center, Superfund Docket, Mail Code 28221T; 1200 Pennsylvania Avenue, NW., Washington, DC 20460
- *Hand Delivery:* EPA Docket Center—Public Reading Room; EPA West Building, Room 3334; 1301 Constitution Avenue, NW, Washington, DC 20004. Such deliveries are only accepted during the Docket’s normal hours of operation, and special arrangements should be made for deliveries of boxed information.
- *Listening Session:* Oral and written comments on the topics in the **SUPPLEMENTARY INFORMATION** section of this Notice will be accepted at each of the three listening sessions. Follow the instructions provided on the listening session website at <http://www.epa.gov/superfund/sites/npl/hrsaddition.htm> for preparing written comments to be submitted at one of the listening sessions.

Instructions: Direct comments on the topics identified in the **SUPPLEMENTARY INFORMATION** section of this notice to Docket ID No. EPA–HQ–SFUND–2010-1086. EPA’s policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or superfund.docket@epa.gov. Note that the <http://www.regulations.gov> website is an “anonymous access” system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment.

If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the

body of your comment and along with any disk or CD-ROM submitted. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center—Public Reading Room, EPA/DC, EPA West, Room 3334; 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Superfund docket is (202) 566-0276.

FOR FURTHER INFORMATION CONTACT: Terry Jeng, phone: (703) 603-8852, email: jeng.terry@epa.gov, Site Assessment and Remedy Decisions Branch, Assessment and Remediation Division, Office of Superfund Remediation and Technology Innovation (Mail Code 5204P), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

EPA is considering adding a vapor intrusion component as a new mechanism to the HRS that would enable vapor intrusion contamination to be included in an HRS evaluation. Presented below is background information on the HRS, its statutory basis, and further detail regarding this potential addition and related topics on which EPA is requesting public comment.

The Agency will conduct public outreach activities, including facilitating public listening sessions, providing public information documents, and establishing a website with more information regarding this potential addition to the HRS. The Agency will consider the information gathered from this Notice, listening sessions, and other sources before making a decision on whether to issue a proposed rulemaking to add subsurface contaminant intrusion to the HRS. The Agency is therefore requesting comments only regarding this potential addition to the HRS, and is not considering changes to the remainder of the HRS.

EPA is currently scheduled to hold three listening sessions following publication of this Notice to allow interested parties to present feedback on the potential HRS addition. EPA welcomes the input that will be provided to the Agency by listening session participants. This input will be considered by the Agency as it determines the need for and nature of the addition to the HRS.

For those stakeholders who cannot attend one of the listening sessions, comments on the topics described below in the *Potential Addition of Vapor Intrusion Component to the HRS* subsection of this Notice should be submitted in accordance with the instructions in the **DATES** and **ADDRESSES** sections of this Notice. Written comments will also be accepted at the listening sessions. Follow the instructions provided on the listening session website at <http://www.epa.gov/superfund/sites/npl/hrsaddition.htm> for preparing written comments to be submitted at one of the listening sessions; see also the **ADDRESSES** section of this Notice.

In a separate effort, EPA is also preparing a final guidance document on vapor intrusion that will replace the 2002 Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). The guidance document is not directly related to the potential addition of a vapor intrusion component to the HRS and more information about this effort will be provided in a future Federal Register Notice. More information can be found on EPA's vapor intrusion website at <http://www.epa.gov/oswer/vaporintrusion/>.

Background

Vapor Intrusion

When hazardous substances, pollutants or contaminants are spilled on the ground or otherwise migrate to the subsurface, they can move in the subsurface environment and eventually enter buildings as a gas or vapor, or even as a liquid in some cases. Dry cleaning solvents and industrial de-greasers are products that contain hazardous substances that when released to the environment, can migrate into the soil and subsurface environment, enter buildings by seeping through cracks in basements, foundations, sewer lines and other openings and ultimately result in human exposures. Vapor intrusion is of particular concern because concentrations of vapors can rise to a point where the health of residents or workers in those buildings could be at risk. Intrusion of contaminants in a non-vapor state may also be a pathway of concern because of the potential for human exposure to the liquids, the resulting precipitates, or associated vapors.

Statutory Basis

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601, *et seq.* ("CERCLA or "the Act") in response to the dangers posed by uncontrolled releases of hazardous substances, pollutants, or contaminants. Section 105(a)(8)(A) of CERCLA required that the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) include criteria for determining priorities among releases or threatened releases for the purpose of taking remedial or removal action. Criteria were to be based upon relative risk or danger, taking into account the population at risk, the hazardous potential of the substances at a facility, the potential for contamination of drinking water supplies, direct human contact, destruction of sensitive ecosystems, and other appropriate factors. Section 105(a)(8)(B) of CERCLA requires that the statutory criteria described in section 105(a)(8)(A) be used to prepare a list of national priorities among the known releases, or threatened releases throughout the United States, and that at least 400 sites be designated for priority. The list, which is Appendix B of the NCP, is the National Priorities List (NPL).

To implement CERCLA, EPA promulgated the revised NCP, 40 CFR Part 300, on July 16, 1982 (47 FR 31180) pursuant to section 105 of CERCLA and Executive Order 12316 (48 FR 42237 August 20, 1981). The NCP, further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants under CERCLA. The Agency developed the Hazard Ranking System ("HRS") to implement Section 105(a)(8)(A). The HRS was codified as Appendix A of the NCP. The HRS is the primary mechanism EPA uses to evaluate a site for placement on the NPL.

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986. This amendment required the HRS to be revised to more accurately assess the relative degree of risk to human health and the environment posed by sites and facilities subject to review. Revisions to the HRS were proposed in 1988 (53 FR 51962) and promulgated in 1990 (55 FR 51532). The revisions changed the way EPA evaluates potential threats to human health and the environment from hazardous waste sites, as well as made the HRS more accurate in assessing relative risk. The revisions included the addition of the human food chain and recreation threats to the surface water pathway and the addition of a new exposure pathway (i.e., soil exposure pathway). CERCLA called for the establishment of both the NPL and the HRS.

National Priorities List

CERCLA established in Appendix B of the NCP, the NPL, which is also commonly known as the Superfund List. The NPL is a list of contaminated sites identified to have known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation. A site can be placed on the NPL via three methods (see 40 CFR 300.425(c) of the NCP for further information):

- Achieving a score of 28.50 or greater under the HRS;

- Designating by a State or Territory as its top priority for listing on the NPL (regardless of its HRS score); or
- Using the Agency for Toxic Substances and Disease Registry (ATSDR) listing mechanism (see 40 CFR.300.66(b)(4) of the NCP for further information).

Rationale for Adding Vapor Intrusion to the Hazard Ranking System

In a May 2010 report (*EPA's Estimated Costs to Remediate Existing Sites Exceed Current Funding Levels, and More Sites are Expected to Be Added to the National Priorities List*, GAO Report to Congressional Requesters, GAO-10-380, May 2010), the Government Accountability Office (GAO) concluded that if vapor intrusion sites are not assessed and, if needed, listed on the NPL, there is the potential that contaminated sites with unacceptable human exposure will not be acted upon. GAO recommended that the EPA Administrator determine the extent to which EPA will consider vapor intrusion in listing NPL sites and how this will affect the number of NPL sites listed in the future.

Many sites on the NPL that have subsurface contaminant intrusion problems were placed on the NPL by evaluation of pathways other than a contaminant intrusion pathway. There are other contaminated sites, however, that did not qualify for placement on the NPL under the current HRS. However, these sites may qualify for placement on the NPL if the threat from vapor intrusion was included in the HRS. A new HRS mechanism would enable EPA to identify situations in which individuals are exposed or potentially exposed to vapor or other contaminant intrusion in dwellings, work places, or other structures or enclosures.

Hazard Ranking System

The HRS is a screening tool used by EPA to assess the relative threat that sites with actual or potential contaminant releases pose to human health or the environment. The HRS is the primary mechanism EPA uses to place a site on the NPL. (As noted earlier, there are two other mechanisms that can be used to place sites on the NPL.) The sites on the NPL are then further investigated to determine the extent of the threat and whether cleanup of the site under EPA's Superfund Remedial program is

warranted. The HRS is a numerically based screening system that uses information from initial, limited investigations that can be collected relatively quickly and inexpensively, thus allowing most Superfund resources to be directed to remedial actions at sites on the NPL. The HRS does not provide a risk assessment of a specific site, but serves as a screening level indicator of the highest priority hazardous releases or potential releases.

The HRS score is currently based on an evaluation of up to four separate pathways: ground water migration, soil exposure, surface water migration, and air migration. Pathways are routes by which exposure to contaminant releases by human or sensitive environments can occur.

1. The ground water migration pathway evaluates the likelihood that hazardous substances will travel through the ground below and contaminate aquifers and drinking water wells that draw on those aquifers. The groundwater pathway does not consider the potential risk of exposure to vapor intrusion from contaminated aquifers.
2. The surface water migration pathway evaluates the likelihood that hazardous substances can enter surface water and affect people or the environment. Threats to humans from this pathway include drinking water, the human food chain (i.e., contaminants build up in the aquatic organisms that humans in turn consume), and sensitive environments.
3. The soil exposure pathway evaluates the potential threats to humans and terrestrial environments posed by direct, physical contact with hazardous substances or contaminated soil. This pathway includes threats to those living on property with hazardous substances or soils contaminated with hazardous substances, and those living nearby with access to the property.
4. Finally, the air migration pathway evaluates the likelihood of release of hazardous substances into the atmosphere and how many people and sensitive environments could be exposed to hazardous substances carried in the air, including gases and particulates. The air migration pathway does not consider indoor air contamination.

The scoring system for each pathway is based on a number of individual factors associated with risk-related conditions at the site. These factors are grouped into three categories:

1. Likelihood of exposure (i.e., likelihood that a site has released or has the potential to release hazardous substances into the environment)
2. Waste characteristics (i.e., inherent toxicity, mobility of the substances and the quantity of the hazardous substances that has been released)
3. Targets (i.e., people or sensitive environments actually or potentially exposed to the release)

The HRS site score, which ranges from 0 to 100, is obtained by combining the pathway scores. A site may be scored for one or more of the pathways depending on the nature of the release. Any site scoring 28.50 or greater is eligible for placement on the NPL. As noted previously, the HRS score does not represent a specified level of risk, but is a cutoff point that serves as a screening-level indicator of the highest priority hazardous releases or potential releases based on the criteria identified in SARA.

Potential Addition of Vapor Intrusion Component to the HRS

Consistent with CERCLA Section 105 and SARA, the Agency regards it appropriate to consider amending or adding to the HRS when such amendments would identify sites of the highest priority for evaluation. EPA is considering the potential enhancement of the HRS by including a vapor intrusion component that address issues related to the intrusion of hazardous substances, pollutants, and contaminants into structures (e.g., homes, offices, schools, manufacturing facilities). To comprehensively explore, and if determined appropriate, identify approaches for adding the threat posed by contaminant vapor intrusion into occupied structures to the HRS, EPA is beginning the process of soliciting stakeholder input. To determine whether to move forward with this addition, and if so, to determine a range of potential approaches, EPA is soliciting input on the topics described below.

1. The level and extent of vapor intrusion contamination that would warrant evaluation for placement on the NPL, as well as the identification of screening level information sufficient to perform this evaluation.
2. Methods for incorporating vapor intrusion into the HRS while, to the extent possible, maintaining the structure of the other pathways in the current HRS and retaining that same structure

throughout the new mechanism for vapor intrusion (i.e., likelihood of release, waste characteristics, and targets). These methods could include the addition of vapor intrusion as a migration pathway (e.g., groundwater), or part of an exposure pathway (e.g., threat within a direct exposure pathway along with soil).

3. Consideration of the importance of evaluating the potential threat to populations not demonstrated to be exposed to contaminant intrusion.
4. The identification of sampling procedures available and practical to detect the presence of contamination due to vapor intrusion.
5. The availability of screening sampling strategies that can adequately compensate for the variability in vapor intrusion rates under different climatic and seasonal conditions.
6. Identification of analytical methods that are sufficiently precise and accurate to demonstrate a significant increase in contaminant levels from vapor intrusion.
7. The importance of the threat posed by exposure to contaminant vapor intrusion via inhalation, dermal contact with the vapors or condensate on surfaces, and ingestion.
8. The identification of what environmental factors (e.g., porosity of soil, presence of a contaminated aquifer, climate) and structural and lifestyle factors (e.g., houses with basements) should appropriately be considered in determining whether a site warrants sampling for contaminant vapor intrusion.
9. In addition to residences, schools and other occupied structures, the identification of structures in which contaminant vapor intrusion could result in a significant threat to human health (e.g., community recreation centers, cultural centers, museums, athletic facilities).
10. The possible need to consider not only contaminant vapor intrusion, but also intrusion of contaminants in solid (i.e., particulates) and liquid forms.

In addition to these topics, EPA also solicits input on community outreach methods that would be most effective in gathering and disseminating information regarding this potential addition to the HRS. To further support this effort, EPA requests public input on the identification of possible vapor intrusion sites. This information will be used for informational purposes only.

EPA will consider all public input when evaluating whether changes to the HRS are appropriate, and whether to issue a proposed amendment to the HRS.

Listening Sessions

The first listening session will be held in Arlington, VA on February 24, 2011. Specific details of the listening sessions, including dates and locations for the other two sessions, and instructions for those wishing to present oral comments will be posted at:

<http://www.epa.gov/superfund/sites/npl/hrsaddition.htm>. At this site, users will also be able to sign up for a mailing list that will be used to distribute logistical information on these listening sessions. Registration is not required to attend a listening session with the following exceptions.

Due to space limitations, parties interested in presenting oral comments at the Arlington, VA listening session only, must register for that session. Registration must be completed at least 3 calendar days prior to the session. Details for registration will be posted on the Web at *<http://www.epa.gov/superfund/sites/npl/hrsaddition.htm>*. If no speakers have registered by 2 calendar days prior to this listening session, it will be cancelled and EPA will notify those registered of the cancellation. The Agency will also post on its website that the listening session has been cancelled.

In addition to attending in person, participation in the Arlington, VA listening session will be available via a teleconference. Those wishing to attend via teleconference must register as described above. EPA will provide the teleconference information to registrants via email notification in advance of the session.

The Arlington, VA listening session will be held at EPA's Potomac Yard office located at: 2777 Crystal Drive, Arlington, VA 22202. The listening session will begin at 9:00 a.m. and end at 5:00 p.m. The Arlington, VA listening session may be webcast. Please refer to the Superfund "Addition of Vapor

Intrusion to HRS” Web Site, <http://www.epa.gov/superfund/sites/npl/hrsaddition.htm> for information on how to access the webcast. Please note that the webcast is a supplementary public process provided only for convenience. If difficulties arise resulting in webcasting outages, the meeting will continue as planned.

In general, each oral comment at listening sessions should be limited to no more than 15 minutes in length. If, however, there are more individuals who wish to present comments than the allotted time for the listening session allows, an announcement will be made at the beginning of the listening session that the time limit has been adjusted to allow for the presentation of more comments.

Dated:

1/25/04



Mathy Stanislaus,

Assistant Administrator,

Office of Solid Waste and Emergency Response.

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