

**Montana Department of Environmental Quality (DEQ)
Waste Management and Remediation Division**

**Guidance for Applying EPA's Contained-In Policy to Environmental Media
June 2017 (revised)**

Environmental media (soil, ground water, surface water, and sediment) are not generally considered solid wastes. However, when environmental media is contaminated with a Resource Conservation and Recovery Act (RCRA) listed hazardous waste or exhibits a characteristic of a hazardous waste, the media must be managed as hazardous waste until the media no longer contains the waste. DEQ may, under certain site-specific circumstances, make a “contained-in determination” that an environmental media containing a hazardous waste is not subject to hazardous waste regulation.

Discussion

EPA has issued a contained-in policy which requires that soil and other environmental media be managed as if they were hazardous waste if they contain a listed hazardous waste, or exhibit a characteristic of hazardous waste. A contained-in determination does not mean that no hazardous constituents are present in the environmental media; rather, it means the concentrations of hazardous constituents present do not warrant management of the media as hazardous waste.

Importantly, there are circumstances when an environmental media no longer contains hazardous waste, but still subject to the land disposal restrictions (LDRs) of 40 Code of Federal Register (CFR) Part 268.

Environmental Media Containing Listed Hazardous Wastes

The contained-in determination for environmental media containing a listed hazardous waste refers to a process where a site-specific determination is made that concentrations of hazardous constituents in any given volume of environmental media are low enough to determine the media does not contain hazardous waste. The determination that media no longer contains a listed waste is made by an authorized state or the EPA.

Specific wastes were identified as “listed hazardous wastes” in 1980 when EPA promulgated the federal hazardous waste rules. If an environmental media is contaminated with a waste that has been designated as a listed hazardous waste, the media automatically is considered to contain that listed waste.

If an environmental media was contaminated with a waste prior to the date the waste was designated as listed, the media would not be subject to regulation under RCRA as long as the media remains in-situ. However, once the contaminated media is actively managed, i.e. removed from the ground, the listing applies and the contaminated media must be managed and disposed of in compliance with RCRA hazardous waste regulations. LDRs of 40 CFR Part 268 would also apply to the media once the media is actively managed.

Environmental Media Exhibiting a Characteristic of Hazardous Waste

The generator must determine whether the media exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity. Definitions for characteristics of hazardous waste are found in 40 CFR 261, Subpart C. Because these determinations can be made through relatively straightforward analytical testing, EPA has stated that no formal contained-in determination by EPA or an authorized state is required (EPA, October 1998).

LDRs of 40 CFR Part 268 attach to a media which exhibits a characteristic of hazardous waste when that media is actively managed. If the characteristic is removed prior to active management, LDRs would not apply.

Considerations for Contained-in Determinations

EPA or an authorized state can make a contained-in determination. Contained-in determinations may be made before or after treatment of a contaminated environmental media and should include consideration of site-specific exposure pathways (potential for human exposure, soil permeability, leaching potential to groundwater), as well as final disposition of the media. A contained-in determination must meet two basic criteria:

1. The environmental media must not exhibit a characteristic of hazardous waste; and
2. Concentrations of hazardous constituents in the media must not present a threat to human health and/or the environment at final disposition.

Contained-in Determination Process for Contaminated Soils and Sediment

A generator of soil or sediment containing a listed hazardous waste may request DEQ make a contained-in determination that the soil or sediment is not subject to hazardous waste regulation. The request must be written and include the documentation and information listed below. If there are any questions regarding the required information, the generator should contact DEQ prior to submitting the request. DEQ may ask for additional information after initial review.

The request should document that:

1. The source of the hazardous constituents is a listed hazardous waste;
2. The soil or sediment does not exhibit a characteristic of hazardous waste;
3. The soil or sediment subject to the contained-in determination has been appropriately characterized by representative sampling based on the estimated volume of impacted soil or sediment; and
4. Concentrations of hazardous constituents present in the soil or sediment at the time of the request were not achieved by dilution. (note that some forms of treatment and/or removal are appropriate ways to lower concentrations of hazardous constituents in contaminated soil or sediment.)

In addition, the request should include, but not be limited to:

1. Historical and background information on the site in question;

2. Information on the wastes contained in the soil or sediment (e.g. sources, hazardous waste listing, etc.);
3. Information on soil and/or sediment types, if available;
4. Information on treatment and treatment results, if the waste-containing media has been treated prior to the request;
5. Complete and valid sampling and laboratory analytical results, including:
 - a. Laboratory reports;
 - b. Validation reports; and
 - c. A table of sampling locations, associated analytical results, and comparison to applicable screening levels or site-specific cleanup levels (SSCLs);
6. Proposed final disposition of the soil or sediment; and
7. Information and written approvals, as applicable, for potential off-site disposal facilities.

DEQ will then evaluate the request for a contained-in determination in the following manner:

1. DEQ will verify that the soil or sediment does not exhibit a characteristic of hazardous waste.
2. DEQ will compare laboratory results for the characterization samples to DEQ-approved SSCLs, if available, or DEQ-approved generic screening levels (screening or cleanup levels based on direct contact and leaching potential to groundwater will be used in either case.)
 - a. For soil or sediment that will remain on-site, residential SSCLs or generic screening levels will be used unless use of the property has been restricted and the restrictions have been approved by DEQ, or DEQ has approved other enforceable site-specific management controls which limit potential exposure of human or environmental receptors to the media.
3. If the laboratory results for characterization samples are below all appropriate SSCLs or generic screening levels, DEQ may make a determination that the soil or sediment no longer contains a hazardous waste (contained-in determination).
4. If the laboratory results for the characterization samples are below the direct contact SSCLs or generic screening levels but exceed leaching to groundwater SSCLs or generic screening levels, DEQ will evaluate the proposed disposal location of the waste.
 - a. On-site disposal: A contained-in determination cannot be made on contaminated media that is proposed to be disposed of on-site unless DEQ has approved enforceable site-specific management controls which limit potential exposures of human or environmental receptors to the environmental media, and that control or prevent migration of hazardous constituents to groundwater.
 - b. Off-site disposal: If the contaminated media is proposed to be disposed off-site, DEQ will evaluate information on the off-site disposal facility, including but not limited to:
 - i. The name and location of the disposal facility.

- ii. The disposal facility's acceptance requirements, including any facility-specific requirements for analytes and analyte concentration limits.
 - 1) Examples of analytes and analyte concentration limits might be dioxins in wood treating waste, benzene concentration in petroleum-contaminated media, or TCLP analysis for RCRA toxicity characteristic evaluation.
 - iii. Information and/or analytical data the generator has provided to the disposal facility about the contaminated soil or sediment.
 - 1) The generator must provide the same information and analytical data to both the disposal facility and to DEQ. The purpose is to give DEQ assurance that the facility has adequate knowledge of the media it may potentially be receiving.
 - iv. Verification from the disposal facility that the acceptance requirements have been met for the contaminated soil or sediment in question, stating the acceptance is contingent upon a determination by DEQ that the media no longer contains a hazardous waste.
 - v. Written verification that the disposal facility is appropriately permitted to accept contaminated soil or sediment and is in compliance with its license or permit requirements.
 - vi. Written verification that the disposal facility's landfill is appropriately lined to contain leachate.
 - 1) If the landfill is not lined, the request for the contained-in determination should explain how the disposal facility controls and removes leachate and how the disposal facility's containment is protective (e.g. the landfill is underlain by 60 feet of competent silty clay with a permeability of 1.9×10^{-7} centimeters per second).
- c. If the evaluation of the off-site disposal facility indicates disposal would be protective of human health and the environment, DEQ may make a contained-in determination.
5. DEQ may make a contained-in determination for contaminated soil or sediment where hazardous constituent concentrations are above DEQ-approved generic screening levels for direct contact and leaching potential to groundwater, if DEQ determines disposal of contaminated soil or sediment at the disposal facility would be protective of human health and the environment (e.g. would not pose a threat to groundwater, or threat of exposure to human and/or ecological receptors).
 6. DEQ may consider site-specific management controls, enforceable by DEQ, which limit potential exposures of human or environmental receptors to the contaminated soil or sediment. DEQ may place restrictions on final disposition of the media, such that no improper management could occur that might threaten human health or the environment.
 7. The generator may not manage the contaminated soil or sediment as a non-hazardous waste until it receives the contained-in determination in writing from DEQ.

Contained-in Determination Process for Contaminated Groundwater and Surface Water

Making a contained-in determination for groundwater or surface water containing a listed hazardous waste is similar to making a soil or sediment determination. A generator of groundwater or surface water containing a listed hazardous waste may request DEQ make a contained-in determination that the groundwater or surface water is not subject to hazardous waste regulation by providing the same, or similar, information as for a soil or sediment request.

1. DEQ will verify that the groundwater or surface water does not exhibit a characteristic of hazardous waste.
2. DEQ will compare laboratory results for the characterization samples to DEQ-approved SSCLs, if available, or DEQ-approved generic screening levels.
 - a. In general and in conformance with Montana law, Circular DEQ-7 water quality standards are used as SSCLs.
 - b. If no DEQ-7 standard is available for a constituent, DEQ-approved generic screening levels may be used, such as Risk Based Screening Levels in Montana's Tier 1 RBCA Guidance for Petroleum Releases or EPA Regional Screening Levels for tap water.
3. If the laboratory results for characterization samples are below SSCLs or DEQ-approved generic screening levels, DEQ may make a determination that the groundwater or surface water no longer contains a hazardous waste (contained-in determination).
4. If the laboratory results for the characterization samples are above SSCLs or generic screening levels, DEQ will evaluate the proposed disposal location of the waste.
 - a. On-site disposal: A contained-in determination cannot be made on waste that is proposed to be disposed of on-site unless DEQ has approved enforceable site-specific management controls which limit potential exposures of human or environmental receptors to the environmental media, and control or prevent migration of hazardous constituents to groundwater or surface water.
 - b. Off-site disposal: If the media is proposed to be disposed off-site, DEQ will evaluate information on the off-site disposal facility, including but not limited to:
 - i. The name and location of the disposal facility.
 - ii. The disposal facility's acceptance requirements, including any facility-specific requirements for analytes and analyte concentration limits.
 - 1) Examples of analytes and analyte concentration limits might be benzene concentration in petroleum-contaminated groundwater or surface water, or TCLP analysis for RCRA toxicity characteristic evaluation.
 - iii. Information and/or analytical data the generator has provided to the disposal facility about the contaminated groundwater or surface water.
 - 1) The generator must provide the same information and analytical data to both the disposal facility and to DEQ. The purpose is to give DEQ assurance that the facility has adequate knowledge of the media it may potentially be receiving.

- iv. Verification from the disposal facility that the acceptance requirements have been met for the contaminated groundwater or surface water in question, stating the acceptance is contingent upon a determination by DEQ that the media no longer contains a hazardous waste.
 - v. Written verification that the disposal facility is appropriately permitted to accept groundwater or surface water and is in compliance with its license or permit requirements.
 - vi. Written verification that the disposal facility's treatment system is appropriately designed to treat the groundwater or surface water.
- c. If the evaluation of the off-site disposal facility indicates disposal would be protective of human health and the environment (e.g. would not pose a threat to groundwater), DEQ may make a contained-in determination.
- 5. DEQ may consider site-specific management controls, enforceable by DEQ, which limit potential exposures of human or environmental receptors to the groundwater. DEQ may place restrictions on final disposition of the groundwater or surface water, such that no improper management could occur that might threaten human health or the environment.
 - 6. The generator may not manage the groundwater or surface water as a non-hazardous waste until it receives the contained-in determination in writing from DEQ.

Other Considerations

- 1. A contained-in determination does not preclude compliance with LDRs of 40 CFR Part 268. It is the generator's responsibility to determine whether LDRs apply to a contaminated media. DEQ should also determine whether LDRs apply or ensure the generator of the media is aware compliance with LDRs may be necessary.
- 2. LDR treatment standards listed in §268.40 and §268.48 are compliance standards for management of hazardous waste and hazardous waste-contaminated environmental media and should not be used as cleanup levels, or as a means to characterize a waste. LDR treatment standards are based on the performance of specific treatment technologies. Technology-based treatment standards are not necessarily appropriate surrogates for site-specific risk-based human or ecological cleanup levels determined by an analysis of risk.
- 3. For off-site disposal, the contained-in determination made by DEQ will be conditioned upon the generator providing DEQ with final disposal receipts, such as manifests or bills of lading. DEQ will use the receipts to verify the final disposal destination of the media.
- 4. Contained-in determinations will be made by DEQ on a site-specific and disposal facility-specific basis. If the disposal facility changes prior to disposal of the media, the generator must notify DEQ and submit updated information and documentation regarding the new disposal facility. DEQ retains the option of voiding the original contained-in determination; the generator may then choose to submit a new contained-in determination request to DEQ.

References

November 13, 1986: EPA memorandum “RCRA Regulatory Status of Contaminated Groundwater.”

August 17, 1988: 53 Federal Register 31138, 31142, 31148.

May 20, 1993: 57 Federal Register 21450, 21453.

April 29, 1996: 61 Federal Register 18795, 18804.

September 15, 1995: Letter from Michael Shapiro (EPA OSW Director) to Peter C. Wright (Monsanto Company).

May 26, 1998: 63 Federal Register 28617.

October 1998: “Management of Remediation Waste Under RCRA”, EPA530-F-98-026