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## **Investigation-Derived Waste & Remediation Waste Considerations**

### **Purpose**

This guidance document has been produced by the Nebraska Department of Water, Energy, and Environment (DWEE) to facilitate consistency throughout the state in managing Investigation-Derived Waste (IDW), remediation environmental media, and debris potentially contaminated with hazardous waste. While this guidance is applicable to locations that do not fall under the “Area of Contamination” (AOC) policy or have not had an AOC designated, AOC considerations are discussed to better clarify the full range of options available when considering investigation and remediation questions, should an AOC be appropriate. This document was written for environmental investigation and remediation professional as general guidance and is not meant for use in developing cleanup plans or criteria. Contact your DWEE remediation project manager before finalizing the details of your individual remediation projects.

### **What is Investigation-Derived Waste (IDW)?**

IDW is a subset of remediation waste that is generated in the process of investigating or examining a known or potentially contaminated site. It includes solid and hazardous waste, media (including groundwater, surface water, soils, and sediments), and all debris that contains listed hazardous wastes or exhibit a characteristic of hazardous waste. It also includes media and debris that is not hazardous but is contaminated with hazardous constituents. Not all IDW is hazardous waste.

IDW includes wastes that are generated from field investigation activities, typically approved and overseen by the DWEE or the U.S. Environmental Protection Agency (EPA), that are specifically designed to determine the nature and extent of contamination. IDW is typically generated during the site assessment, remedial investigation, and/or feasibility study stage of a cleanup project. IDW is the waste originating from an activity related to determining the nature and extent of contamination as well as the preparation or examination of the site for future remediation. Such wastes may include, but are not limited to, drilling mud, cuttings, purge water from test borings and well installation, purge water, soil and other material from the collection of samples, contaminated personal protective equipment (PPE), solutions used to decontaminate non-disposable PPE and sampling equipment, and equipment used during field investigation studies.

IDW does not include wastes that are generated from the removal or displacement of environmental media or debris as a result of other related remediation activities (These are remediation wastes.) or

activities not related to remediation such as geotechnical investigation for building construction.

A generator of IDW can dispose of non-hazardous IDW as solid waste, depending on its physical state and health-based characteristics. Federal, state, and local waste, air, and water regulations still apply. For example, most non-hazardous media cannot be disposed of by open burning and land application of contaminated media is regulated in Nebraska except to permitted municipal solid waste (MSW) landfills.

### **Is the Waste Hazardous?**

Environmental media is not considered to be a waste. However, it can contain listed hazardous waste or enough hazardous constituents that it exhibits a characteristic of hazardous waste. If the media will be actively managed and it contains a listed hazardous waste or exhibits a characteristic of hazardous waste, it must be managed as hazardous waste. More information on identifying hazardous wastes can be found in Nebraska [Title 128 – Hazardous Waste Regulations](#), Chapter 3.

There may be circumstances where pre-existing sampling data may be used to make a hazardous waste determination. Factors such as the age of the extant sampling data, potential for changed conditions, and whether the sampling data to be used is representative of the IDW must be considered. More information regarding hazardous waste determinations can be found in the DWEE Guidance Document “Waste Determinations & Hazardous Waste Testing”.

### **Active Management and Point of Generation**

The concept of “active management” as applied to IDW or remediation waste is associated with environmental media or debris. If media or debris are being displaced on a site due to activities related to contamination investigation or remediation, the DWEE considers it as active management. Activity not related to investigation or remediation is not considered to be active management. For example, routine trench or foundation excavation spoils that are generated at a site that is not an investigation or remediation activity site, or are not related to investigation or remediation activities, are not considered a waste unless it is intended for disposal.

In investigation or remediation activities, the point of generation (POG) of waste is where or when the media or debris is excavated, or when investigation or remediation related wastes are created or rendered spent. For example, the POG of PPE is generally the location where the equipment is determined to no longer be usable. Sampling gloves are routinely rendered “spent” between sampling events. These gloves are considered waste when they are removed.

### **Pre-Characterized Sites**

IDW from a site does not require active management as hazardous waste when a site can be adequately pre-characterized as not contaminated with listed or characteristic hazardous waste. This type of IDW could include cuttings and purge water from wells or piezometers located a significant

distance from known contamination that are being drilled to fully determine hydrologic conditions or gradient, cuttings from an uncontaminated and unsaturated zone above suspected groundwater contamination, etc.

If the pre-characterization is proven to be wrong by subsequent investigation, incorrect management of the IDW may result in an expansion of the scope of the cleanup or remediation due to potential contamination spread. To avoid the possibility of enforcement action, the DWEE recommends that IDW be containerized and managed according to this guidance, pending the complete hazardous waste determination for any portion of a site with limited or poor historical data.

## **How to Manage IDW or Remediation Waste**

Once IDW or remediation waste is generated, it needs appropriate management before a hazardous waste determination is completed. Unless the area where the IDW or remediation waste was generated was pre-characterized as not containing hazardous waste, the waste should be managed as follows:

### Disposable PPE and Sampling Equipment

Containerize when generated. This is a solid waste and could, therefore, be a hazardous waste. PPE and sampling equipment becomes a hazardous waste at the time it is disposed, if it is contaminated with any listed hazardous waste. According to the “Mixture Rule” (Nebraska [Title 128 – Hazardous Waste Regulations](#), Chapter 2, §005.02), any mixture of solid waste and listed hazardous waste becomes a listed hazardous waste. Although unlikely, this waste may also be a hazardous waste if it has been contaminated with enough hazardous constituents to exhibit a characteristic of hazardous waste. For example, spent filters are often characteristic for toxicity.

### Drill Cuttings, Soil, Sediment, and Test Pit Spoils

Containerize when generated pending characterization. If the solid media contains a listed waste, a waste determination must be obtained stating that the waste no longer “contains” listed waste before it can be disposed of as a non-hazardous waste. See the EPA’s “contained-in” policy for more information. The DWEE recognizes that circumstances will vary from site to site.

Generally, drill cuttings, soil and sediment may be returned to the site of origin if the media is non-hazardous and is below the EPA Regional Screening Levels (RSLs) or the Nebraska Voluntary Cleanup Program (VCP) Remediation Goals (RGs) for all constituents of concern. IDW or remediation waste drill cuttings, soil and sediment must not be used as fill on other areas of the site or off-site unless the media is not mixed with other solid wastes and does not have the potential to cause contamination that may threaten human health or the environment. Being below appropriate RSL or VCP RGs does not necessarily mean that the media will not have the potential to cause contamination. There might also be situations where “landfarming” of some types of contaminated soils is appropriate. For example, media contaminated solely with petroleum fuels can often be land farmed successfully and safely.

If you have questions regarding how to implement this section for your situation, contact the DWEE for clarification and assistance.

#### Purge and Development and Decontamination Water

Containerize when generated. If the water is a listed or characteristic waste, it may not be discharged to the ground or back to the well. If analysis of the water determines that it is not hazardous waste and it meets groundwater standards (Nebraska [Title 118 – Groundwater Quality Standards and Use Classification](#)), VCP RGs, or health-based standards, the water may be poured on the ground at or near the point of generation, but not back to the well. If the water contains a listed waste, a waste determination must be obtained stating that the waste no longer “contains” listed waste before it can be disposed of as a non-hazardous waste. See the EPA’s “contained-in” policy for more information.

Discharging this material to surface water or drainages should be avoided because of stringent aquatic life water quality standards.

Where there is prior approval by the affected Publicly Owned Treatment Works (POTW) (Municipal Wastewater Treatment Plant) Facility, discharges directly through an on-site sanitary sewer system to a POTW may be allowed. The water cannot be transported to a Nebraska POTW if it is a listed or characteristic hazardous waste. Nor can listed or characteristic hazardous wastewater be transported to another site that has a sanitary sewer connection to a Nebraska POTW.

The DWEE understands that there may be a large amount of decontamination water to containerize for analysis and characterization and recommends that the initial generation of decontamination water be minimized.

Water generated from dewatering IDW must be managed as a separate waste. Containerize the water upon generation. A separate waste determination is required. If analysis of the water determines that it is not hazardous waste and it meets groundwater standards (Nebraska [Title 118 – Groundwater Quality Standards and Use Classification](#)), VCP RGs, or health-based standards, the water may be poured on the ground at or near the point of generation. If the water contains a listed waste, a waste determination must be obtained stating that the waste no longer “contains” listed waste before it can be disposed of as a non-hazardous waste. See the EPA’s “contained-in” policy for more information.

#### **Miscellaneous Waste Issues**

The disposal of waste in unpermitted landfills is prohibited. In other words, waste cannot be placed in or on the ground or placed back in or on the ground if it is not a permitted landfill. During investigation or remediation activities, materials that may have been improperly disposed previously might be excavated. There may also be instances where random non-media items are excavated that had a

legitimate reason for being in the ground. If waste-like items are excavated, they must not be placed back in the ground. These items should be sent to a MSW if determined to be non-hazardous and can pass the “paint filter” test.

For example:

- If you excavate an abandoned pipe or cable section, that item should not be re-buried. There is no need to remove the remaining pipe or cable that was not excavated.
- If you come upon a dumpsite and determine that the waste was placed after October 1, 1993 (the date when the solid waste regulations became effective in Nebraska), all of the waste may need to be removed to a permitted landfill. If the landfill site was closed prior to October 1, 1993, then only the waste items removed during excavation need to be sent to a permitted landfill. The unexcavated wastes can be recovered.

If you come upon “free product” material, you should consider this material to be a waste and it should not be left on site. A waste determination and proper waste management is required.

## **Use as Fill**

Nebraska [Title 132 – Integrated Solid Waste Management Regulations](#), Chapter 1, §041 defines “fill” as solid waste that consists only of one or more of the following: sand, gravel, stone, soil, rock, brick, concrete rubble, asphalt rubble, or similar material. If excavation uncovers buried material that appears to meet the above definition, the DWEE would normally allow such material to be replaced in the excavation if it is not otherwise hazardous. If the “fill” were mixed with other types of wastes not mentioned above, it would not meet the above definition. This may be evidence that the location might be a former landfill. In some cases, excavation spoils might be able to be used elsewhere on site or at another site. Nebraska Title 132, Chapter 2, §002.01 and §002.01A allow the use of fill for certain land improvement purposes provided that the wastes used in these activities are not mixed with other wastes and do not have the potential to cause contamination that might threaten human health or the environment.

## **Hazardous IDW or Remediation Waste Placed on the Ground**

Hazardous IDW or remediation waste placed on the ground creates a regulated unit and constitutes a solid waste management unit (SWMU) that might be subject to Resource Conservation and Recovery Act (RCRA) permitting or closure requirements. Placement on the ground occurs even when IDW or remediation waste is placed on plastic sheets or concrete pads. The AOC Policy can change this assessment, but only when and where an AOC has been formally declared.

## Storage in Containers

Hazardous waste storage in containers must meet the requirements of Nebraska [Title 128 – Hazardous Waste Regulations](#), Chapter 9 or 10 (whichever applies), or, if applicable, a RCRA hazardous waste storage permit. Hazardous IDW or remediation waste must be stored and managed as hazardous waste because returning it to a SWMU might exacerbate the contamination cleanup regulatory issues. Facilities will need a hazardous waste storage permit after accumulating hazardous IDW or remediation wastes for longer than:

- 90 days for Large Quantity Generators (LQGs) (See Title 128, Chapter 10), or
- 180/270 days for Small Quantity Generators (SQGs) (See Title 128 Chapter 9).

Hazardous waste accumulation is limited to the generator's accumulation timeframe. A one-time 30-day extension approval may be requested from the Department, if the generator can justify that and additional 30 days is essential. This request must be made in writing, within the generator's allowable accumulation timeframe. Facilities that are already permitted may need to modify their current RCRA permit to store the waste. If a remedy is chosen to treat the waste in tanks or containers and that remedy cannot effectively treat the hazardous IDW, the waste must be disposed of within the generator's accumulation timeframe or as delineated in a RCRA permit.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites meet applicable or relevant and appropriate requirements (ARARs) relative to on-site treatment of remediation waste.

## IDW or Remediation Waste Disposal

### Hazardous IDW or Remediation Waste

If the amount of waste generated falls under Conditionally Exempt Small Quantity Generator (CESQG) limits, then the waste may be disposed of to a permitted MSW with prior approval by the landfill. If operating as a CESQG, no more than 19.5 kg (43 pounds) of hazardous waste may be sent to the landfill on any one day. Such wastes must be able to pass the "paint filter" test. Check with the local landfill, waste handler, or local health department prior to disposal, as city or county ordinances may be more stringent.

Certain liquid wastes may be sent to a POTW via an onsite sanitary sewer with prior approval by the POTW.

The generator of IDW or remediation waste must meet all hazardous waste generator requirements as appropriate. More information regarding hazardous waste generator requirements can be found in the DWEE Guidance Document "Comparison of Hazardous Waste Generator Requirements".

### Non-hazardous IDW

Return water media to the ground at or near the POG if it meets certain criteria as explained above. Site specifics such as groundwater quality and distance to surface water must be

considered. If the liquid is non-hazardous, it may be transported to a POTW, pending acceptance from the POTW to take the liquid. Non-media IDW or remediation waste must be disposed of off-site to a proper facility.

Non-hazardous environmental media should be disposed of in a permitted landfill or properly treated on or off site. If the levels of contamination in the soil are protective of human health and the environment, it may be allowed to be used as fill, as discussed above.

## **Area of Contamination Policy Considerations**

As stated previously, this guidance document generally applies to non-AOC sites. This section is intended as a source of additional information should conditions warrant application of the AOC policy.

AOCs are certain discrete areas of generally dispersed contamination that can be equated to a RCRA landfill and where movement of hazardous wastes within those areas would not be considered land disposal and would not trigger the RCRA land disposal restrictions. The AOC policy generally involves the concept of “placement”. “Placement” of hazardous waste into or on a landfill or other land-based unit is considered land disposal which triggers the land disposal regulations and might trigger other RCRA requirements including permitting, closure, and post-closure regulations and procedures. Generally, “placement” does not occur when waste is consolidated within an AOC, while it is treated in situ, or when it is left in place. “Placement” does occur if wastes are moved from one AOC to another (e.g., for consolidation) or when waste is actively managed (e.g., ex situ treatment) within or outside the AOC and returned to the land.

### AOC Factors

Only the EPA and DWEE can formally designate an AOC in Nebraska. The lateral extent of an AOC must be limited to the actual area of contiguous, but not necessarily homogenous, contamination. Hazardous waste placed outside of an AOC would be considered land disposal and might be subject to RCRA corrective action. AOCs do not include adjacent areas used to implement response activities. The AOC policy does not include contaminated groundwater or surface water that may be associated with the land-based source of hazardous waste.

### AOC Designation

The Department can designate an AOC upon a formal request based on:

1. Data presented to the Department,
2. Discrete areas of contamination,
3. Approval of an adequate, comprehensive sampling plan,
4. A workplan describing hazardous waste activities to be performed in the AOC, and
5. Any other pertinent factors particular to the site.

## **RESOURCES:**

- DWEE Home Page <https://dwee.nebraska.gov/>
- EPA Office of Solid Waste <http://www.epa.gov/osw>

## **Contacts:**

- DWEE Main Number (402) 471-2186
- DWEE Toll Free Number (877) 253-2603
- DWEE Hazardous Waste Compliance Assistant (402) 471-8308
- Email questions to: [DWEE.moreinfo@nebraska.gov](mailto:DWEE.moreinfo@nebraska.gov)

## **DWEE Publications:**

- Environmental Guidance Document – “Comparison of Hazardous Waste Generator Requirements”
- Environmental Guidance Document – “Waste Determinations & Hazardous Waste Testing”
- Environmental Guidance Document – “Nebraska Voluntary Cleanup Program (VCP)”  
*Guidance documents are available on the DWEE website by clicking “Visit Nebraska Department of Environment and Energy (DEE),” selecting “Forms,” and “Publications, Grants & Forms.”*
- [Title 118 – Groundwater Quality Standards and Use Classification](#)
- [Title 128 – Nebraska Hazardous Waste Regulations](#)
- [Title 132 – Integrated Solid Waste Management Regulations](#)  
*Titles are available on the DWEE website by clicking “Visit Nebraska Department of Environment and Energy (DEE),” selecting “Resources and Services,” “Laws & Regulations,” and “Rules & Regulations.”*

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