



IOWA DEPARTMENT OF NATURAL RESOURCES

Leading Iowans in Caring For Our Natural Resources

## Reducing or Terminating Post-Closure Care (RTPC)

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## Introductions

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# Purpose of Workshop

- Learn the process for requesting reduction or termination of post-closure care for your landfill.
- How to comply with forthcoming changes to your closure permit that will require submission of an Request to Terminate Closure Plan (RTCP).
- Learn how implementation of the process has saved other landfills time and money.

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## Closed Landfills Past, Present, and Future

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## Regulatory History

- 1962: Iowa has no formal laws on solid waste, but the Iowa Public Health Engineer offers first “guidance” document.
- 1965: Federal Government passes the Solid Waste Disposal Act.

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## Regulatory History

- By the mid-1970s, all 50 states had begun to regulate solid waste disposal (RCRA 1976).
- Iowa begins to move from hundreds of local dumps to regulated landfills beginning in 1972 with laws taking effect in 1975.

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## Regulatory History – Iowa 1975



- Professional engineering
- Siting requirements
- Specific design requirements such as low permeability clay liners
- Operating requirements such as use of daily cover
- Reduced risk to health
- Reduced environmental hazards
- Operator training
- Management of leachate

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## Regulatory History Iowa Groundwater Act

Iowa Legislature passes Groundwater Act in 1987 added requirements for new construction

- 5 foot separation of waste and groundwater
- Impermeable liner required after 1989
- Leachate collection
- 4 feet of final cover (rather than 2')
- Expanded monitoring (gas and groundwater)
- Post-closure care requirements (30 years)
- Financial assurance



Many landfills continued to operate existing cells by filling vertically until no longer allowed (early 90s)



First round of regulations lead to dozens of landfills closing permanently in the late 80s and early 90s.



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## Regulatory History – Iowa 1990



By 1990, Iowa had 129 landfills, down from more than 500 dumps in 1972.

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This was a landfill...



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16 Jun 2020, 09:51:12 IA DNR

.....and this was a landfill too...



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## What is Post-Closure Care?

- Thirty Years (typically)
- Final Cover Integrity
- Groundwater Monitoring
- Gas Monitoring
- Leachate Management
- Inspections



- Iowa DNR is interested in working with closed landfills, especially those that are not associated with an operating landfill (revenue-negative facilities) to identify efficiencies or cost savings.
- Efficient use of money results in the best outcome for all parties!







## Opportunities for Cost Savings

Groundwater monitoring plan modifications

- Optimize the number of wells
- Statistics-based reduction in the frequency of monitoring events
- Reduced analyte list



## Additional Opportunity for Cost Savings

- Reduction in frequency of gas monitoring.
- Reduction in frequency of engineering inspections.





## Non-Traditional Approaches

Example: temporary suspension of groundwater monitoring while working to improve other aspects of the site such as cap integrity or gas migration, which both impact groundwater quality.

## Ending Post-Closure Care at Closed Landfills: Four Pillars



- **Groundwater Quality**: Is the closed landfill affecting local groundwater? Are parameters of concern stable and/or declining?
- **Cap Integrity**: Is the landfill cap stable, low maintenance, and free from erosion?
- **Landfill Gas**: Is methane present? Is it migrating off-site?
- **Leachate Management**: Is the site required to manage leachate? Are leachate levels stable or declining? Is there a long-term management plan?



## Each Closed Landfill is Unique

- Some facilities may be ready to end PCC at ~20 years, and some may take longer than 30 years.
- Iowa DNR will work to ensure that all are treated fairly and assessed using the same four criteria. => RTPC Guidance



## Initial Process of Ending Post-Closure Care

1. Landfill or consultant makes an official request or recommendation for ending PCC to DNR.
2. DNR will approve or deny the request to proceed.
3. If approved, a short letter report is prepared with evidence supporting each of the four areas of care.
4. DNR will review this report and if approved, make a final site inspection.



IOWA SOLID WASTE PROGRAM  
ENVIRONMENTAL COVENANT

This environmental covenant is established pursuant to Iowa Code (IC) chapter 455I entitled Uniform Environmental Covenants Act.

(INSERT name(s) of fee title owners of affected property), hereafter "grantor(s)", (INSERT name(s) of all holder(s)), hereafter "holder(s)", and the Iowa Department of Natural Resources (DNR) in its capacity as an agency of Iowa state government enter into this environmental covenant for the purpose of subjecting the affected property described below to certain activity and use limitations in accordance with the terms and conditions as specified and the authorities granted the DNR in Iowa Code (IC) chapter 455I, § 455B.103(7), and DNR rules in 567 Iowa Administrative Code.

1. **Affected Property.** The grantor(s) is/are the fee title owner(s) of the property located at (INSERT address). The affected property is legally described as: (INSERT the legal description of the affected property).

Hereinafter, the affected property will be referred to as "the property."

2. **Risk Management and Institutional Controls**

In accordance with Chapter 455B of the Iowa Code, DNR permitted municipal solid wastes to be disposed on the affected property under solid waste disposal project permit (INSERT permit number) issued to (INSERT permit holder).

Permit, investigations and reports are available for review in the DNR Solid Waste files under permit (INSERT permit number).

Presence of buried municipal solid wastes on the property may present a risk to public health and the environment if certain activities occur on the property. As such, the Director, pursuant to her authority under IC § 455B.103(7), has determined that an environmental covenant is necessary to manage risk of future exposure by limiting specified activities on the property and establishing affirmative obligations.

(INSERT the following alternative paragraph if the contamination source is not the property.) In response to a release of (INSERT contaminant) on an adjacent property (the source site) located at (INSERT address of source site), (INSERT name of the party requesting that grantor enter into this covenant) has requested that the grantor execute this environmental covenant in order to satisfy the regulatory requirements applicable to the source site under 567 IAC 113. This environmental covenant is an institutional control which will allow the source site to obtain the (No Further Action Classification or low-risk classification) for the entire site or for certain exposure pathways.

3. **Reopening.** The signatories acknowledge that in the event that activity and use limitations provided in this environmental covenant fail to serve their intended purpose - including prevention of exposure to contamination - DNR may reopen its review and regulatory oversight of the contaminant condition on the property as provided under the terms of this covenant, IC chapter 455I, and applicable DNR administrative rules.

4. **Identity of Grantor(s) and Holder(s).**

GRANTOR(S): (INSERT name of each fee title holder)

HOLDERS: (INSERT each person signing the covenant as a holder and describe their relationship to the property. A grantor can be a holder as well. Other persons may include contract buyers, lessees, mortgage holders,

municipalities, owners of the source site, and other interested parties.)

AGENCY: Iowa Department of Natural Resources

5. **Representations and Warranties.** The grantor(s) warrants to the other signatories to this covenant the following:  
The grantor(s) is/are the sole fee title owner(s) of the property;

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## Process of Ending Post-Closure Care Continued....

5. Make sure include property interest form.
6. Owner or consultant completes the environmental covenant template on the DNR Solid Waste website and submits to DNR in *DRAFT* form without signatures.
7. DNR Solid Waste and DNR Legal will review and approve, or suggest changes.
8. Once approved, the EC will be signed by the DNR Director, and an official copy forwarded to the owner of the site.
9. Owner of site signs EC and has it recorded with the property deed by the county assessor.
9. A file-stamped copy is returned to DNR.
10. DNR issues a letter officially rescinding the permit.



## Process of Ending Post-Closure Care....the End

11. Once the permit is rescinded, the site is free from Solid Waste regulations under chapters 103 (old) and 113 (newer).
12. The site is still (and perpetually) subject to chapters 102 (excavation of solid wastes) and 131/133 (Contaminated Sites).
13. Any future environmental responsibility would be handled by DNR Contaminated Sites.
14. The EC *is a living document* and can be/should be amended at any time in the future if either party feels that it no longer reflects what is best for the site or environment.



# After Permit Rescission

Once the permit is rescinded, the site can be repurposed in many ways so long as the terms of the EC are upheld.

- Wildlife habitat
- Prairie restoration
- Pollinator habitat
- Public hunting area
- Recreation area
- Outdoor education
- Hay production



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# Mount Trashmore in Cedar Rapids



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**MOUNT TRASHMORE**  
ELEVATION 948'

**LEGEND**

- TRASHMORE TRAIL: HORNBILL BIRDS, PRAIRIE OWL
- STUMPTOWN TRAIL: WALKING, BICYCLING
- OVERLOOK TRAIL: WALKING, BICYCLING
- CEDAR RAPIDS SCENIC OVERLOOK

**READ THIS...**

- The Iowa DNR is not responsible for any accidents or injuries.
- Trail access limited to designated trail courses.
- Use trails at your own risk.
- No smoking, no alcohol.
- Trail use is prohibited when gates are closed.
- Trail users will be prosecuted.

**USER RESPONSIBILITY CODE**

Trail usage involves the risk of injury or death. Your knowledge, decisions, and actions contribute to your safety and the safety of others please always adhere to the code.

- STAY ON TRAILS.** Do not use hiking or biking trails and features. Stay on the designated trail courses.
- BE RESPONSIBLE.** You are responsible for smoking objects and people.
- KNOW YOUR LIMITS.** Use within your ability. Do not drink and work your way up.
- INSPECT AND MAINTAIN YOUR EQUIPMENT.** Check your equipment and their operation prior to riding. Inspect your bike before riding.
- BE VISIBLE.** Do not stop when your equipment is broken, missing, or use not visible.
- HAVE FUN!**

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## Current Status

- 35 closed landfill sites have completed the environmental covenant process and had their permits rescinded.
- Seven additional sites are currently in the process of working toward a signed environmental covenant.
- Sites with a rescinded permit must submit an engineer inspection report biennially.



## Potential Roadblocks

- Property ownership
- Erosion
- Leachate
- Un-bracketed groundwater plumes
- Significant cap alterations





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## Process Overview

1. RTPC Guidance Overview – on DNR Website
2. Develop the plan
3. Forthcoming permit amendment will require the plan to be completed at least 5 years prior planned permit expiration.
4. Implement the plan
5. Adjust the plan as needed
6. Complete the plan
7. Reduce or terminate post-closure care
8. Environmental covenant
9. Rescind the permit



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## Process Steps – Final Cover

1. Review previous inspections
2. Site Walkover
3. Vegetation
4. Leachate Seeps
5. Settlement and ponding
6. Erosion
7. Stormwater features





## Process Steps – Landfill Gas Migration

- Migration pathways
- Presence of receptors
- Safety and groundwater contamination
- Explosion - Madison Wisconsin 1983 - two people with severe burns
- Sioux City Landfill 2018 - two people injured
- Groundwater quality is impacted by gas generation

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## Process Steps – Groundwater Quality

- Metals and Volatile Organic Compounds
- Safe Drinking Water Limits
- Trend Analysis

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## Process Steps – Leachate Management

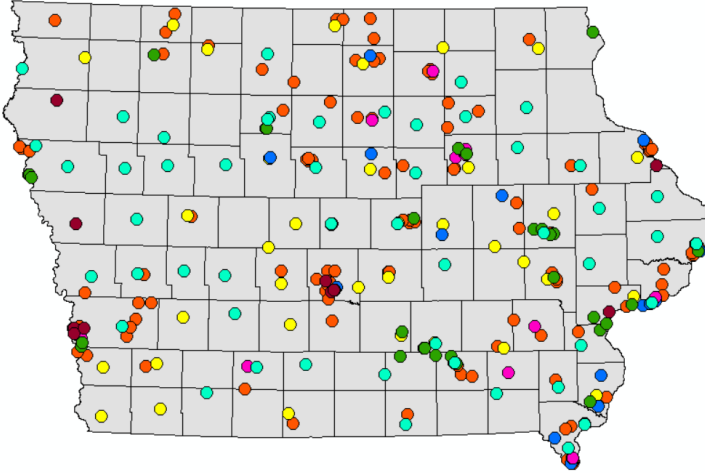
- If applicable – Some sites have no leachate collection
- Characterize Leachate Quality
- Modeling – Fate and Transport Modeling
- Trial Shutdown Period



## Summary

- An Environmental Covenant (EC) is applicable to the land owner not a lease holder.
- An alternative to a covenant is a closure permit with minimized and economical requirements.
- Leachate management is often the most difficult issue.
- Each site is unique.

# Questions?



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