

RCRA Corrective Action



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Why are we discussing RCRA Corrective Action?



MoDNR has worked thru a back log of RCRA Permit Applications, Renewals and Modifications.

RCRA staff will shifting focus to other areas including RCRA corrective actions.

- revisiting status of historic disposal sites
- reviewing ongoing RCRA Corrective Actions (work plans, reports, data, etc.) and/or
- performing new facility assessments/investigations.

What is a RCRA Corrective Action?



RCRA's process for investigating and cleaning up releases of hazardous waste or hazardous constituents.

RCRA Corrective Action applies to facilities:

1. Applying for or have a RCRA Permit / Interim Status [40 CFR 264](#)...or
2. Should have had a RCRA Permit
 - Routine/systematic releases of solid or hazardous waste at Non-Permitted facility
 - NOV/Order, Administrative Action or Voluntary Agreement [RCRA Facility | Envirofacts | US EPA](#)

RCRA Corrective Action vs. Other Clean Up Programs?



Missouri Spill Bill:

- Spill, Report, OSC, Clean Up then Close.

Brownfields / Voluntary Cleanup Program (BVCP) / MRBCA: 10 CSR 25-18

- Contaminated Sites, Owners may choose to perform voluntary clean up

CERLA Remedial Action: 40 CFR 300.430

- Historic uncontrolled abandoned sites impacted with Hazardous Substances. May include hazardous waste sites, accidents, spills, and other emergency releases of pollutants and contaminants.
- Applicable to “PRP’s”

RCRA Corrective Action:

- Required for TSDF Permitted facilities,
- Hazardous Waste and Hazardous Constituents

Obligatory PFAS Slide



CERCLA: PFAS/PFOA salts and isomers are Hazardous Substances

RCRA: Proposed adding 9 PFAS chemicals to the Hazardous Constituents list
(40 CFR 261 App VIII)

- Hazardous Constituent ≠ Hazardous Waste
- MDNR will not adopt PFAS as a hazardous constituent until EPA provides guidance.
- If adopted, RCRA corrective actions will need to consider PFAS chemicals

Per EPA as of March 19, 2025, EPA's February 8, 2024 proposal to list nine PFAS as RCRA hazardous constituents has not been stayed, and the EPA is actively pursuing its rulemaking process to address PFAS under RCRA. However, PFAS RCRA constituent proposed rule has been paused for 60 days on Feb 25, 2025 CERCLA due end April.

RCRA Corrective Action / Definition of Hazardous Waste.



89 FR 8598 Feb 8, 2024

EPA is providing clarification that the statutory definition of hazardous waste must be used for RCRA corrective actions.

(5) The term “**hazardous waste**” means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may— (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed..

What is the RCRA Corrective Action Program (CAP)



$$\text{CAP} = ((\text{RFA} + \text{RA}) + \text{ISM} + \text{RFI} + \text{CMS} + \text{CMI}) \times \text{Plans \& Reports}$$

- RCRA Facility Assessment
- Release Assessment
- Interim Stabilization Measures
- RCRA Facility Investigation
- Corrective Measures Study
- Corrective Measures Implementation
 - Post Closure Care

RAP: Remedial Action Plan (CAP vs RAP)



If you are one of those facilities that “should have had a permit”, you may want to do the clean up under a Remedial Action Plan (**RAP**).

- Rule is found in [40 CFR 270](#) “Hazardous Waste Permitting” Subpart H
- RAP is an alternative permit to the full RCRA permit process.
- Also, does not pull the entire site into RCRA Corrective Action / investigation.

RFA: RCRA Facility Assessment

$$\text{CAP} = (\text{RFA} + \text{RA}) + \text{ISM} + \text{RFI} + \text{CMS} + \text{CMI}$$



Pre-Permit Assessment / Inspection to identify SWMU and AOCs.

AOC: Area(s) of Concern

- A broader geographic area on or off site that has experienced significant environmental degradation, often due to human activities (i.e. Release of Hazardous Waste / Constitutes).
 - “which is not known to be a Solid Waste Management Unit (SWMU)” [System of Registries | US EPA](#)
 - Use statutory definition of Hazardous Waste
 - Not the same AOC as “Area of Contamination” but similar.

SWMU: Solid Waste Management Unit

- A Solid Waste Management Unit (SWMU) is a specific location where solid waste has been placed regardless of whether it was intended for Solid/Hazardous Waste management.
- May include waste piles, drain fields, landfills, surface impoundments, and areas used to manage waste.
- [Pre and Post RCRA](#)

RA: Release Assessment

$$CAP = (RFA + RA) + ISM + RFI + CMS + CMI$$



A Release Assessment could be part of either the RFA and RFI.

- 40 CFR 264 Subpart F “Release from Solid Waste Mgt Units”
- May be appropriate if the RFA identifies a potential for significant exposure to humans or potential for impacts to the environment that should be addressed by Interim Measures
- Typically includes; Work Plan, Objectives, Analytical Results and Findings Report / recommendations for ISM (interim measures) or RFI (facility investigation)

ISM: Interim Stabilization Measures

$$CAP = (RFA + RA) + \text{ISM} + RFI + CMS + CMI$$



Interim Stabilization Measures (ISM). The overall goal of the "stabilization" measures is to:

- Control or abate threats to human health and/or the environment from releases and/or
- To prevent or minimize the further spread of contamination while long-term remedies are pursued

National Corrective Action Prioritization System **NCAPS**.

- Clean Up Ranking System (High Med Low).

[Link to CAP](#)

RFI: RCRA Facility Investigation

$$\text{CAP} = (\text{RFA} + \text{RA}) + \text{ISM} + \text{RFI} + \text{CMS} + \text{CMI}$$



Write a RFI Work Plan

- i. Investigate each Area Of Concern to define type and extent of contamination.
- ii. EPA Regional Screening Levels ([RSL](#))

Implement the Investigation Plan:

- i. Investigate to determine existence, type and extent of release.
- ii. Characterize Areas of Concern

Public Meetings

Write progress reports and Write Final Report

- i. Designate Area of Contamination / SWMU

CMS - Corrective Measures Study

$$CAP = (RFA + RA) + ISM + RFI + \text{CMS} + CMI$$



Evaluate remediation options/designs and select appropriate clean up action considering cost, effectiveness, environmental impact.

AOC, Area of Contamination.

- Movement within AOC does not trigger “generation” or “placed” (disposed)

RCRA Corrective Action rules provide options for three units:

CAMU Corrective Action Management Unit: [40 CFR 264.552](#)

- Similar to AOC policy but allows for more movement / treatment of waste
- Dispose of CAMU eligible waste only.

TU: Temporary Units 40 CFR 264.553

- Tanks and Containers / storage or treatment (1 yr)

Staging Pile: no acronym? 40 CFR 264.554

- Storage (2 yr)

Waste Determination



Derived From Rule: 40 CFR 261.3(c)(2)

- Waste from the Treatment, Storage, or Disposal of a Listed Waste is a Listed Waste.

Mixture Rule 40 CFR 261.3(a)(2)

- If a solid waste is mixed with a Listed Waste, the mixture is a Listed Hazardous Waste.
- If a solid waste is mixed with a Characteristic Waste, the mixture is a Hazardous Waste only if it still exhibits a characteristic (LDR would still apply).

Environmental Media, Contamination Caused by a Listed Waste?

- Methyl Ethyl Ketone (MEK) can be F005, U159 or D035 (200mg/L) [EPA Remediation Waste Guide](#)
- Need to know the source of the waste to apply the appropriate waste code.
- For a spill of F005 to the ground, does the Mixture Rule mean the earth is now a F005 listed waste?
- Environmental Media (the earth) \neq Solid Waste but may be subject to RCRA if it contains a Haz. Waste.

Waste Determination



Contained In Rule / Policy

- The mixture of a “non-solid waste” (Env. Media, soil, ground water) and a Listed Hazardous Waste must be managed as a hazardous waste....unless the Environmental Media contains listed hazardous waste below health-based levels, determined by the Agency.
- This called a “Contained In Determination”
- Make determination before point of generation (POG) [Reference Table](#)

Area of Contamination - [Policy](#)

- No “Point of Generation” if waste is not moved from AOC
- In situ treatment within AOC not RCRA treatment and does not trigger LDR
- Removal and treatment outside of AOC would be subject to RCRA

LDR Applicability [RO 11954](#) Placement and Timing

CMI: Corrective Measures Implementation

$$CAP = (RFA + RA) + ISM + RFI + CMS + CMI$$



- a. Conceptual design (15 percent)
- b. Write Public Involvement Plan, Health and Safety Plan, Security Plan, Waste Management Plan, O&M plan, Post Closure, Monitoring, etc.
- c. Intermediate Planning: 50 80 95% design completion
- d. Final Plans and Specification. 100%
- e. Construction Work Plan / Schedule
- f. Implement plan
- g. Public Meetings
- h. Write Reports (completion reports/status)

Other:



Government Performance and Results Act (GPRA)

RCRA Corrective Action are required to track **Environmental Indicators (EI)**. If you have a RCRA Permit and RCRA Corrective Action or a RAP, you or your State Agency will need to report two Environmental Indicators:

- Current Human Exposures “Under Control”
- Migration of Contaminated Groundwater “Under Control”.
- [Environmental Indicators | Corrective Action | Wastes | US EPA](#)

2022 NESHAP Remediation Source Category

- EPA removed the RCRA / CERCLA remediation exemption from the NESHAP air permitting rules.

RCRA Corrective Action



Thank you for attending

Questions?