



RELEASE-BASED CLEANUP REGULATIONS

WORKSHOP 4 – CLEANUP STANDARDS, CLOSURE, AND AUDITS

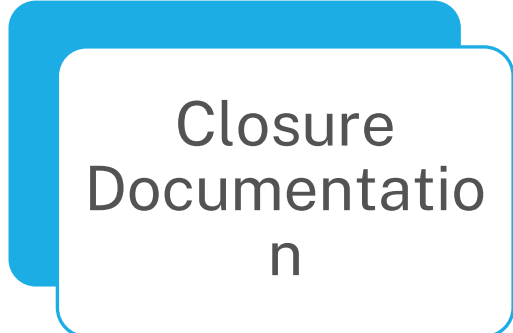
Presented by: Graham Stevens, Chief of Bureau of Water Protection and Land Reuse
Brendan Schain, Legal Director for Environmental Quality Branch



PRESENTATION OVERVIEW



Cleanup
Standards



Closure
Documentatio
n



Audits



Scenarios



CLEANUP STANDARDS

RCSA 22A-134TT-7 (GENERAL PROVISIONS), -9 (SOIL), & -10 (GROUNDWATER)

KEY WORDS & DEFINITIONS

Managed multifamily residential activity means activity at any **parcel** with four or more dwelling units, provided such dwelling units are managed by an association or a professional property management company.

Parcel means a piece, tract, or lot of land, together with the buildings and other improvements situated thereon, a legal description of which piece, tract, or lot is contained in a deed or other instrument of conveyance.

Passive recreation activity means recreational activities that do not require development of prepared facilities like sports fields or courts or buildings but does allow for the establishment of paved or unpaved walking trails.



KEY WORDS & DEFINITIONS (CONT.)

Tier characterization means the nature and extent of each substance present has been 50% of the cleanup standard or the laboratory reporting limit, whichever is higher.



- ❖ Pesticides shall be characterized to the extent needed to determine if they are present due to application consistent with its labeling. If they are not, additional characterization may be required.
- ❖ A release of **polluted material** that is discovered on a parcel used only for industrial/commercial activity may be characterized only to the extent needed to determine that it is prudent to remediate the polluted material using the conditional exemption for **historically impacted material**.

KEY WORDS & DEFINITIONS (CONT.)

Historically impacted material means **polluted material** that will be managed in accordance with the conditional exemption for historically impacted material pursuant to section 22a-134tt-9(j) of the RBCRs.

Polluted material means **soil** that has been historically intermixed with coal ash, wood ash, coal fragments, coal slag, coal clinkers, asphalt paving fragments, or any combination thereof.

Permit by Rule is a regulatory mechanism similar to a general permit for facilities/parcels that meet certain eligibility criteria. The text of the permit is contained within the regulations.



CLEANUP STANDARDS TOPICS

The RSR cleanup standards (currently RCSA 22a-133k-1 et. seq.) will be moved into RBCRs.

Additions to RCSA 22a-134tt cleanup standards:

- ❖ Exemption for releases that have migrated onto another parcel [7(e)]
- ❖ New Direct Exposure Criteria provisions [9(b), 9(d)]
- ❖ Conditional exemption for historically impacted material [9(j)]
- ❖ Conditional exemption for dredge materials [9(k)]

CONDITIONAL EXEMPTION – RELEASE THAT MIGRATED FROM ANOTHER PARCEL

22a-134tt-7(e)

2 exemptions:

- ❖ Contamination solely from an off-site source

22a-134tt-7(e)(1)

A portion of a release has migrated onto a person's property and those substances have not otherwise been released at their parcel.

- ❖ Comingled Groundwater Plume

22a-134tt-7(e)(2)

A person has a release to groundwater and the substances have co-mingled with the same substances from a different release that has migrated onto their parcel.



CONDITIONAL EXEMPTION – *CONTAMINANTS SOLELY FROM AN OFF-SITE SOURCE*

22a-134tt-7(e)(1)

A person may meet their RBCR obligations if they:

- Did not create the release
- Do not own/possess the parcel that is the source of the release
- Demonstrate that the substances have not otherwise been released at their parcel
- Break or mitigate exposure pathways (drinking water, direct exposure, volatilization) on their parcel
- Report the release (if otherwise subject to the reporting requirements)
- Submit a release remediation closure report documenting the above
- Provide reasonable access to the creator/maintainer to investigate/remediate off-site release

CONDITIONAL EXEMPTION – *CO-MINGLED GROUNDWATER PLUME*

22a-134tt-7(e)(2)

A person may close groundwater impacts on their parcel from an off-site source if they:

- Did not create and is not maintaining the source of the off-site release
- Are maintaining a release to groundwater of the same substances as the off-site release
- Break or mitigate exposure pathways (drinking water, volatilization) on their parcel
- Submit a release remediation closure report demonstrating that the on-site release complies with the RBCRs and that groundwater concentrations do not exceed concentrations at the upgradient parcel boundary
- Provide reasonable access to the creator/maintainer to investigate/remediate off-site release

NEW DEC FOR ADDITIONAL EXPOSURE SCENARIOS

- Managed Multifamily
- Passive Recreation

General requirements:

- Soil is not polluted with PCBs
- Land use restriction or conservation easement restricting residential activity



MANAGED MULTIFAMILY DIRECT EXPOSURE CRITERIA

22a-134tt-9(b)(2)(C)

Release may qualify for use of managed multifamily DEC if:

- 4 or more residential units on the same parcel
- Managed by an association or a professional property management company
- Lease agreements/bylaws/other enforceable documents:
 - prohibit residents from digging in soil
 - allow active recreation only on areas with impervious surface
- An EUR is in effect to prohibit residential activity other than managed multifamily residential activity



PASSIVE RECREATION DIRECT EXPOSURE CRITERIA

Release may qualify for use of passive recreation DEC if:

- Parcel is only used for passive recreation activity
- Either an EUR or a conservation easement granted to a local, state, or federal agency is in effect to prohibit residential activity other than passive recreation activity



22a-134tt-9(b)(2)(D)



| Examples of Uses that Qualify | Examples of Uses that DO NOT Qualify |
|-------------------------------|--------------------------------------|
| Hiking trails | Sports fields or courts |
| Bike paths | Playgrounds |
| Horse trails | Picnic areas |
| XC ski trails | Campgrounds |

DEC EXEMPTION – INACCESSIBLE SOIL UNDER CONCRETE (WITH PERMIT BY RULE)

22a-134tt-9(b)(3)(C)

Inaccessible soil at a release area can be managed using a permit by rule and does not need to be remediated to the DEC if it meets the following conditions:

| Located beneath one of the following surfaces | For VOCs | For Other Pollutants |
|---|---|---|
| <ul style="list-style-type: none"> ➤ Concrete or bituminous concrete used for parking or vehicle travel ➤ Below a building foundation | Not present above the applicable DEC | ≤ I/C DEC and ≤ 15x the applicable DEC |
| | OR | OR |
| | > DEC and at least 30 feet from any buildings | If > the I/C DEC But ≤ 15x the applicable DEC The soil is at least 1 foot below bituminous concrete or concrete |

I/C = Industrial/Commercial

DEC = Direct Exposure Criteria

INACCESSIBLE SOIL UNDER CONCRETE (WITH PERMIT BY RULE) – *ADDITIONAL REQUIREMENTS*

Owners are required to:

- Ensure that pavement or foundations are well maintained in a manner as to not expose soil
- Conduct five-year inspections of condition of pavement foundations
- Provide five-year inspection report to the commissioner
- Properly manage polluted soil exposed during temporary maintenance of asphalt or concrete or underlying infrastructure
- Record affidavit of facts on the land records



LEP-CALCULATED ALTERNATIVE RISK-BASED DEC

22a-134tt-9(d)(5)

An LEP may calculate alternative direct exposure criteria based on total risk at a site provided:

- A parcel-wide investigation has been conducted
- All discovered releases will be remediated
- Alternative risk-based DEC ensures that the total site risk posed by such substances does not exceed:
 - ✓ cumulative excess lifetime cancer risk of 10^{-5} for 2 or more carcinogenic substances
 - ✓ excess lifetime cancer risk of 10^{-6} for each individual carcinogenic substance
 - ✓ cumulative hazard index of 1 for non-carcinogenic substances with the same target organ
- Calculations are completed using a form prescribed by the commissioner
- Not applicable for PCBs

LEP-CALCULATED ALTERNATIVE RISK-BASED DEC – CONCEPTUAL SITE MODEL

Cumulative Risk Calculator developed using the following CSM:

| | | Resident | Multi-family Residential | Passive Recreation | Construction Worker | Outdoor Worker | Indoor Worker |
|----------------|------------|----------------------------------|--------------------------|--------------------|---------------------|----------------|---------------|
| Exposure Media | Pathway | Adult & Child Exposure Scenarios | | | Adult Only | | |
| Soil | Ingestion | Yes | Yes | Yes | Yes | Yes | Yes |
| | Dermal | Yes | Yes | Yes | Yes | Yes | No |
| | Inhalation | Yes | Yes | Yes | Yes | Yes | No |
| Groundwater | Ingestion | Yes | Yes | No | Yes | Yes | Yes |
| | Dermal | Yes | Yes | No | No | No | No |
| | Inhalation | Yes | Yes | No | No | No | No |
| Indoor Air | Inhalation | Yes | Yes | No | No | No | Yes |

“Yes” indicates complete exposure pathway included in calculator

“No” indicates pathway not included

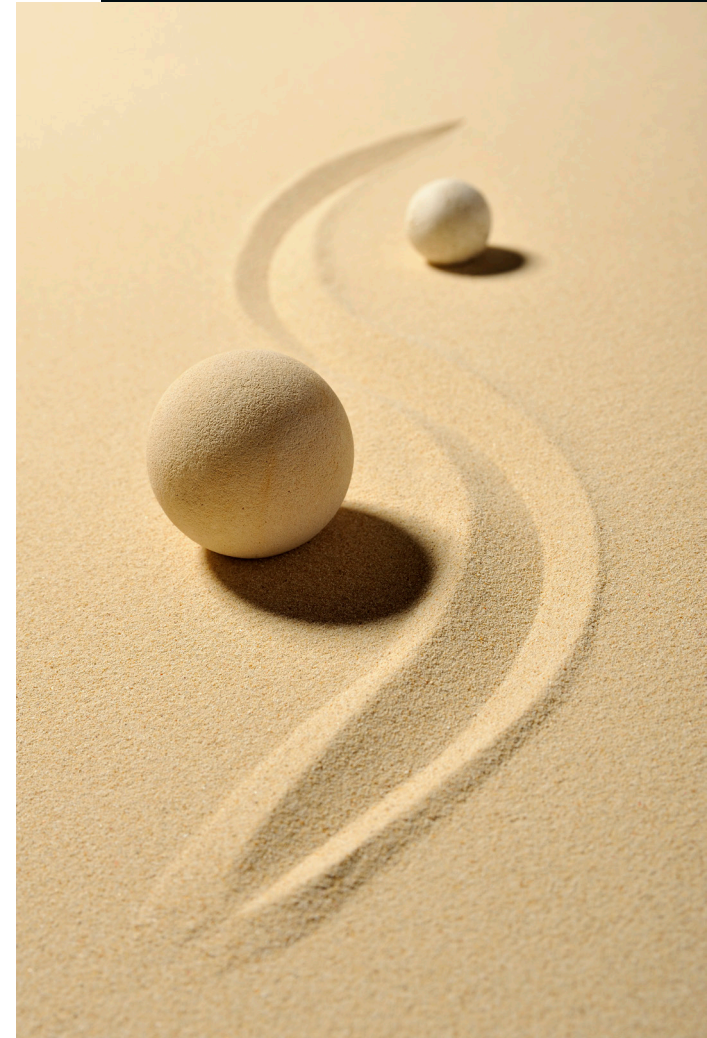
“shading” indicates calculator will allow LEP to propose alternative DEC based on total risk for the site

CONDITIONAL EXEMPTION – HISTORICALLY IMPACTED MATERIAL

22a-134tt-9(j)

Allows on-site management of historically impacted material through a permit by rule and provides conditional exemptions from DEC and PMC.

- Meets definition of "polluted material."
- Uses a permit by rule to exempt the material from soil criteria (DEC and PMC) if certain conditions met.
- Assigned to Tier 2 if notice is provided within 1 year of discovery (no tier checklist required).



HISTORICALLY IMPACTED MATERIAL – PERMIT BY RULE

CONDITIONS OF APPLICABILITY

22a-134tt-9(j)(1)

An owner of a parcel may obtain a permit by rule to manage historically impacted material in place if:

- The parcel is industrial/commercial only.
- Limited tier characterization has determined (1) the presence of historically impacted material and (2) that it is not prudent to remove such material.
- Significant existing releases have been identified within two years of discovering the historically impacted material and addressed within the time frame specified for Immediate Actions.
- All state and federal requirements regarding PCBs in such material have been satisfied.

HISTORICALLY IMPACTED MATERIAL – REQUIREMENTS

22a-134tt-9(j)(2)

Owners are required to:

- Ensure the historically impacted material is not relocated to a different parcel.
- Conduct five-year inspections to document maintenance and parcel use.
- Notify any future purchaser of the permit by rule.
- Maintain only industrial/commercial activity on the parcel.
- Record an affidavit of facts on town/city land records.



CONDITIONAL EXEMPTION – DREDGED MATERIALS

- Commissioner's approval through Structures, Dredging, and Fill Permit (CGS section 22a-361) or Dam Safety Permit (CGS section 22a-403)
- **Not subject to DEC** if covered by one foot of crushed stone or another approved cover depth and material
- **Not subject to PMC** if reused in a location immediately upgradient of the water body from which material was removed



22a-134tt-9(k)



CLOSURE DOCUMENTATION

RCSA 22A-134TT-11 (CERTIFICATION & VERIFICATION) AND -12 (CLOSURE REPORT)

KEY WORDS & DEFINITIONS

Verification means the written opinion of a **licensed environmental professional** on a form prescribed by the commissioner that the remediation of a release satisfies the standards established in regulations adopted pursuant to section 22a-134tt

Licensed environmental professional or **LEP** means an environmental professional who has a current valid license issued by the commissioner pursuant to section 22a-133v of the Connecticut General Statutes



KEY WORDS & DEFINITIONS

Certification means the written opinion of a **permitted environmental professional** on a form prescribed by the commissioner that the remediation of a release satisfies the standards established in regulations adopted pursuant to section 22a-134tt

Permitted Environmental Professional or **PEP** means a person authorized by a permit issued pursuant to section 22a-454 of the Connecticut General Statutes to certify certain release records



RELEASE REMEDIATION CLOSURE REPORT

A release remediation closure report indicates that:

- the cleanup standards have been satisfied
- no further action is required regarding the release whether verified, certified, or issued by the commissioner



CONTENTS OF RELEASE REMEDIATION CLOSURE REPORT

- ❖ Name, mailing address, phone number, and email address of the creator/maintainer
- ❖ Location of the release, including GIS coordinates
- ❖ Date the release was discovered
- ❖ Date the release was reported to DEEP (if required by CGS 22a-134tt or 22a-450)
- ❖ Date of first tier assignment was submitted to DEEP (if required by RCSA 22a-134tt-6)
- ❖ Any other information specified on the form prescribed by the commissioner, including any release records or supporting documentation required by RBCRs

CONTENTS OF RELEASE REMEDIATION CLOSURE REPORT (CONT.)

➡ RELEASES THAT DON'T IMPACT GROUNDWATER

- ❖ Describe the setting of the release (groundwater and surface water classifications, abutting land uses, potential receptors, etc.)
- ❖ Describe the nature, extent and degree of the release
- ❖ Describe remediation efforts
- ❖ If excavation was performed, excavation sidewalls and bottom analytic results
- ❖ Demonstration that contamination has not reached the groundwater
- ❖ Site map showing sample locations
- ❖ May be verified by an LEP or – in specific circumstances – certified by a PEP



CONTENTS OF RELEASE REMEDIATION CLOSURE REPORT (CONT.)

➡ RELEASES THAT IMPACT GROUNDWATER

- ❖ Describe the setting of the release (groundwater and surface water classifications, abutting land uses, potential receptors, etc.)
- ❖ Describe the nature, extent and degree of the release
- ❖ Describe remediation efforts
- ❖ Variances and compliance measures used
- ❖ Analytic results showing soil and groundwater meet criteria
- ❖ Site map(s) showing sample locations and other relevant details
- ❖ EURs or NAULs
- ❖ **Must** be verified by an LEP



WHAT TO DO WITH A RELEASE REMEDIATION CLOSURE REPORT

- ❖ Submit it to the commissioner, if:
 - ❑ The report is for an ERR certified by a PEP; or
 - ❑ The report is for an ERR and the release was assigned to a tier;
 - ❑ The release was an existing release required to be reported
 - ❑ For releases that were not required to be reported to DEEP, within 30 days if the commissioner requests the report

- ❖ Creator/maintainer must retain the report for 10 years



VERIFICATION

LEP verification for the following release records:

- Immediate Action Reports
- Tier assignments
- Changes in tier assignment
- Release Remediation Closure Reports

Form of verification

- Signing or electronically signing the release record
- Affixing the LEP's seal to the release record
- Providing other information specified on form prescribed by the commissioner



CERTIFICATION

PEP certification for the following release records:

- Specific Immediate Action Reports that may be certified by PEP pursuant to section 22a-134tt-5(g)
- Specific Release Remediation Closure Reports, for releases remediated pursuant to section 22a-134tt-8

Form of certification

- Signing or electronically signing the release record
- Providing number and expiration date of the permit issued pursuant to 22a-454
- Providing other information specified on form prescribed by the commissioner



RELEASE REMEDIATION DIRECTED BY THE COMMISSIONER



If commissioner directed the remediation of a release, the commissioner may sign any release record



Commissioner's signature on any release record is equivalent to a verification rendered by an LEP or a certification provided by a PEP



A Release Remediation Closure Report may be issued by the commissioner and shall have the same force and effect as one certified by a PEP or verified by an LEP



AUDITS

RCSA 22A-134TT-13 (AUDITS)

KEY WORDS AND DEFINITIONS

The commissioner may conduct an **audit** of **any release record verified by an LEP or certified by a PEP** to determine compliance with Chapter 445b of the Connecticut General Statutes and the RBCRs. Such audit may be a **screening audit**, a **focused audit**, or a **full audit**. If no audit is conducted, no notification will be issued.

Audit means the commissioner's review of an LEP verification or PEP certification pursuant to section 22a-134tt-13 of the RBCRs

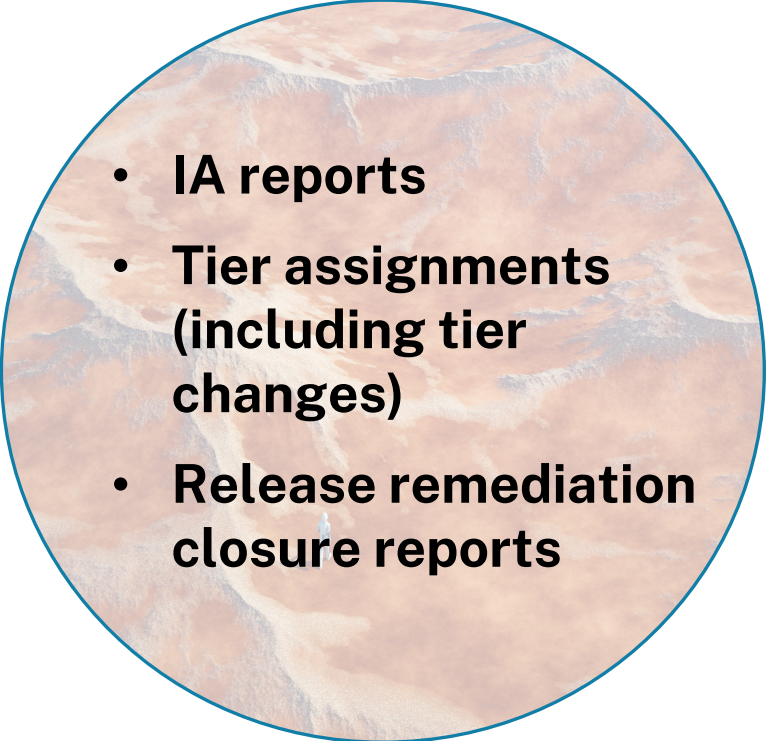
Release record means a document certified by a PEP or verified by an LEP documenting compliance with a requirement of the RCBRs.



WHAT CAN BE AUDITED?

Any release record can be audited

LEP Verified Records

- 
- IA reports
 - Tier assignments (including tier changes)
 - Release remediation closure reports

PEP Certified Records

- 
- IA reports
 - Release remediation closure reports

TYPES OF AUDITS AND PROCESS

| Type | What | Notice of Audit | Possible Outcomes | Timeline |
|------------------|---|-----------------|--|--|
| Screening | Review of 1 release record | ⊘ | Accept (no written notice) Reject ↔ Focused audit ↔ Full audit* | Complete: 180 days |
| Focused | Review of 1 release record | ☑ | Accept Reject ↔ Full audit* | Initiate: 180 days Complete: 18 mo. |
| Full | Review of many or all release records AFTER submission of a closure report | ☑ | Accept Reject | Initiate: 180 days** Complete: 2 yrs. |

*A full audit may be initiated only after closure documentation has been received

**Unless continued from a focused audit

No AUDITS

- ❖ May be requested for release remediation closure report
- ❖ Will be issued if no audit is determined to be necessary
- ❖ Requests to be submitted on form prescribed by the commissioner with a fee of \$500 (non-refundable)
- ❖ Timeline for a no audit determination ≤ 90 days after submittal of closure report



REOPENING VERIFICATIONS & CERTIFICATIONS

Provisions for reopening verifications or certifications are **essentially the same** as the current Property Transfer Program.

- ▣ A verified or certified record relied on inaccurate or misleading information
- ▣ Required post-verification monitoring or operation & maintenance are not conducted
- ▣ A verification relies on an EUR that was not recorded
- ▣ A violation of the Release Based Program is identified (CGS 22a-134qq to 22a-134tt)
- ▣ Remediation failed to prevent a substantial threat to public health or the environment
- ▣ A verification is submitted for a Release Based Program Order (CGS 22a-134ss)

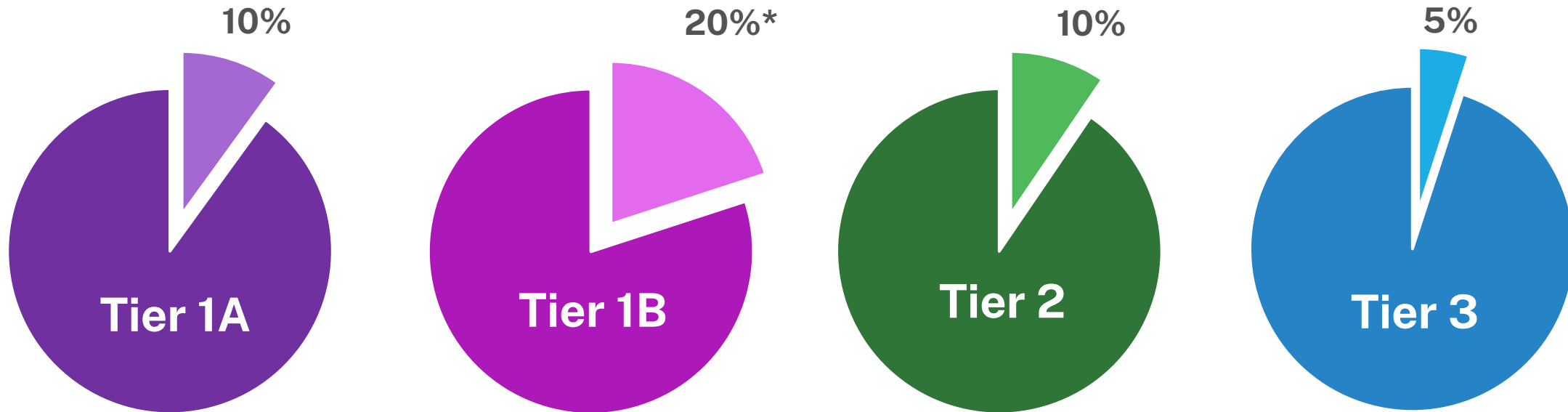
VERIFICATION AFTER PEP CERTIFICATION REJECTION

If a release remediation closure report certified by a PEP is rejected, the commissioner may determine if the release can still be certified by a PEP or if an LEP verification is necessary.



FREQUENCY OF AUDITS

Goal is to conduct audits on a percentage of releases from each tier based on the initial tier assignment:



**CGS 22a-134tt(g)(2) specifies that at least 20% of verifications from one tier will be audited*

A stylized, colorful landscape illustration. The top right corner features a bright yellow sun. Below it is a large, vibrant green hill. The bottom portion of the image is a light blue area representing water, with a dark blue wavy line separating the land from the sea. The word "SCENARIOS" is written in white, bold, uppercase letters in the center of the green hill.

SCENARIOS

SCENARIO #1

A 250-gallon tote of waste oil and copper solution spills into a paved truck well and catch basin during loading. The catch basin is a drywell, and the base is just below the water table. The release is cleaned up and certified as closed by a PEP. An audit of the closure report results in a rejection.

SCENARIO #1 RESOLUTION

A 250-gallon tote of waste oil and copper solution spills into a paved truck well and catch basin during loading. The catch basin is a drywell, and the base is just below the water table. The release is cleaned up and certified as closed by a PEP. An audit of the closure report results in a rejection.

- A release of copper contacted the water table. Such a release cannot be certified by a PEP.
- The certification is rejected.
- Verification by an LEP is required.

SCENARIO #2

Department's review of a report indicates that data usability evaluation appears to be missing from a release record.



SCENARIO #2 RESOLUTION

Department's review indicates that data useability evaluation is missing from a release record.

- This review is a screening audit (notice is not provided to the LEP or creator/maintainer).
- The evaluation is found in the lab data appendix.
- The audit is closed.



SCENARIO #3

During a screening audit of a tier reassignment from 2 to 3, it is found that soil has been remediated to passive recreation DEC but no EUR was recorded.

SCENARIO #3 RESOLUTION



During a screening audit of a tier reassignment from 2 to 3, it is found that soil has been remediated to passive recreation DEC but no EUR was recorded.

- A focused audit would be initiated within 180 days of the submission date.
- The LEP and creator/maintainer would be notified in writing.
- Only the submitted record or a specific issue identified during screening would be audited.
- The audit will be concluded within 18 months from the submission of the release record.

SCENARIO #4

Later on in the same cleanup, during a screening audit of a remediation closure report, it is found that the site has been remediated to passive recreation criteria, however, there is a famous picnic area on site. Furthermore, PCBs were detected in surficial soil.

SCENARIO #4 RESOLUTION

Later on in the same cleanup, during a screening audit of a remediation closure report, it is found that the site has been remediated to passive recreation criteria, however, there is a famous picnic area on site. Furthermore, PCBs were detected in surficial soil.

- A full audit would be initiated within 180 days of the submission date.
- The LEP and creator/maintainer would be notified in writing.
- Any or all release records may be audited.
- The audit will be concluded within 2 years from the submission of the closure report.

A stylized landscape illustration. The top right corner features a bright yellow sun. Below it is a large green hill with a dark blue outline. To the left, a smaller, lighter green hill is visible. The bottom of the image shows a light blue area representing water, also outlined in dark blue. The text "THANK YOU!" is centered on the green hill.

THANK YOU!