Report to the Connecticut Department of Energy and Environmental Protection

on

The Draft Proposed Program Outline for a Transformed Cleanup Program

Topic: Early Off-Ramp and Immediate Response Actions

November 20, 2012

Submitted to Support the Transformation of Connecticut's Cleanup Program

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Introduction

The Department of Energy and Environmental Protection (DEEP) is working to improve Connecticut's cleanup program through an interactive stakeholder process. As part of the transformation of the statutory and regulatory components of the cleanup program, DEEP solicited volunteers for and formed six transformation work groups. DEEP asked these work groups to comment on and make recommendations regarding certain aspects of the transformation, as summarized in the Draft Proposed Program Outline for a Transformed Cleanup Program (Program Outline) dated September 27, 2012.

This transformation Work Group was asked to provide DEEP with comments and recommendations regarding Early Off-Ramp and Immediate Response Actions.

Comments and recommendations contained in this report are the opinions of the Work Group members. Care was taken to identify areas where consensus was not reached among Work Group members.

Work Group Membership

Early Off-Ramp and Immediate Response Actions Work Group

Participant	Representing
Aaron Green (Co-Lead)	DEEP
Nick Hastings (Co-Lead)	Woodard & Curran
John Aceto	DEEP
Mark Barmasse	ARCADIS
Frank Bartolomeo	DEEP
David Carlson	AECOM
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Mark Gottlieb	Catalyst Environmental
George Gurney	Stantec
Maurice Hamel	DEEP
Meg Harvey	CT Dept. of Public Health
Lauren Levine	United Technologies
Stuart Manley	CRA World
Doug Pelham	Cohn Birnbaum & Shea PC
Josh Peruti	McVAC Environmental
Hugh Plunkett	Connecticut Tank Removal
Carter Porter	True Blue Environmental
Lori Saliby	DEEP
Benjamin Stevens	DEEP

Mark Sussman	Murtha Cullina
Jane Warren	McCarter & English
Matthew Williamson	DEEP

Work Group Meetings

The Work Group met five times at DEEP offices in Hartford, on October 11, 16 and 25 and November 5 and 15, 2012.

Background

Under the current remedial framework in Connecticut, spills and incidental releases which are not part of a site in a remedial program rarely receive any formal administrative closure from the DEEP (with exception of programs such as regulated USTs, PCB and Marine terminal cleanups upon achieving the Remediation Standard Regulations (RSRs)). Despite this, the Department ensures that the immediate exposure risks of many of these releases are rapidly reduced. Such releases are also not eligible for verifications by Licensed Environmental Professionals unless the entire "site" has been entered into a remedial program.

Because the process for Transformation of Connecticut's Cleanup Program as currently envisioned may require many of the reportable releases to enter into a remedial program, there would need to be a formal mechanism to provide documentation that each reportable release had achieved closure under whatever new framework is created for remediation regulations. The Program Outline presented the concept of Class A, B and C exits focusing on releases which have undergone a thorough assessment and remediation, coupled with a groundwater monitoring program as required under the then current RSRs. However, for the majority of reportable releases which are envisioned under the new program being envisioned, the magnitude of the release and/or the promptness of the remedial actions would not require this approach of long-term remedial measures and follow-up to confirm the effectiveness of the remediation. Therefore, a process which will allow an "Early Exit" from these long-term obligations would need to be developed.

By providing an opportunity to get releases out of the system quickly, before they become more difficult to remediate, and to provide written certification of closure, incentives would be created for responsible parties to report and address releases quickly. The benefits of quick reporting and action are to 1) avoid the higher costs of long-term obligations 2) minimize the risk to potential human and ecological receptors and 3) provide these a presumption against enforcement actions (assuming compliance with applicable laws). This would have an added benefit of encouraging the quick remediation of releases that may have otherwise gone

unreported because the perceived, or actual, higher cost of entering a clean-up program which includes periodic groundwater monitoring.

Recommendations

Early Exits

An "Early Exit" would be a process that would allow responsible parties to fully remediate reportable releases from certain new releases (spills) within a limited timeframe and achieve full administrative closure without further obligations. Other Work Groups are dealing with the topic of what would be considered to be a "reportable release" and so that will not be addressed here. Our Work Group discussions used ninety (90) days as the default timeframe, but no technical basis for that was discussed (except that this was a timeframe currently used by the DEEP Emergency Response Unit as a default after which referral to the Remediation Division is usually made if cleanup was not yet complete). Releases which are not new spills (historic releases) that are discovered through site assessments or by other means should also be allowed to be evaluated for eligibility to use an Early Exit. We discussed that the time period for addressing these historic releases could be longer than 90 days, either as part of the Early Exit program or through some additional exit program.

It is envisioned that there would be multiple tiers of Early Exits based on a flow chart and corresponding checklists. The flow chart, conceptually illustrated in Appendix A, would direct the environmental professional supervising the remediation regarding a uniform decision-making process on how each tier of Early Exits would be achieved. This would help create a uniform investigation process which would be documented in a spill closure report.

The checklists associated with the decision-making process for each Early Exit would define parameters such as the level of containment of the contaminants released, the type, volume and concentration of contaminants released, their mobility, the geologic setting (soil texture, depth to groundwater, depth to bedrock, etc.), and the potential for human and ecological receptors to be at risk.

The Work Group generally favored limiting eligibility for most of the Early Exits to those releases (whether new spill or historic releases) which could be fully remediated within a 90 day window which begins at the release discovery date. A report documenting the certification of this remediation would need to be submitted to the DEEP promptly following these actions. A 45 day timeframe was mentioned, but not thoroughly discussed. The concept behind this 90 day response window would be to create an incentive to quickly remediate the releases,

thereby minimizing the potential for additional impacts to the environment, especially groundwater, surface water, and indoor air.

It was suggested that there would be a need for extensions to be available in certain circumstances. The exact process for approving these extensions is to be determined. There was no consensus regarding whether all such extensions would need to be subject to the supervising DEEP Unit's review and approval to assure extensions are used sparingly. Some members felt that this would be inconsistent with a goal of the overall Transformation to promote self-implementing approaches.

There was no consensus on the specific incentives that should be used make the 90 day window desirable. There were also a sizable number of members that felt the 90 day limit was not workable or appropriate for historic releases. Therefore, the discovery of releases that are historic could have a similar but separate Early Exit system that could be addressed in a longer timeframe and still have access to some of the benefits of that program.

It was envisioned that the Early Exits would apply to only those releases which had been remediated in full compliance with the remediation standards that would be updated for the creation of this program. Generally, the presence of residual contamination would not be allowable unless it could be documented that the remaining concentrations were below applicable remedial standards. Use of Environmental Land Use Restrictions (ELUR) to allow less restrictive remedial criteria was generally not favored, except for those sites where the ELUR was already on the land records. Some members favored cleanup criteria be based on current land use with simplified notices being allowed to be filed on land records at a future date, however since that would imply a continuing obligation, the finality of the Early Exit would become unclear.

Among the factors discussed to be included in the tiered approach was whether the reportable release:

- Escaped containment and reached the environment;
- Exceeded RSR numeric criteria only in soil;
- Impacted sediment or surface water;
- Impacted bedrock;
- Was detectable in groundwater;
- Exceeded RSR numeric criteria in groundwater;
- Had migrated away from the release area in groundwater; and
- Poses a threat to human or ecological receptors.

If the pollution will need ongoing investigation/monitoring/remedial work beyond 90 days, the reportable release might not eligible for an "Early Exit."

It was generally agreed that if impacts of the release had "gotten away" further work would be needed. The concept of "gotten away" would likely need to be clarified, both through the checklists and put in perspective with existing or updated terms and definitions within the RSRs). In those cases, if impacts could threaten sensitive receptors or human health, an Early Exit would not be available. There was less agreement that some form of Early Exit might be available in situations where contamination had migrated away from the remediation area but did not pose a risk to receptors. Additional tiers of exits should be evaluated based on factors such as site/area-specific risk evaluation or the ability to address groundwater contamination before it can migrate, rather than merely being related to a 90 day period.

Minor Historic Releases

There was much discussion concerning under what circumstances "historical releases" would be eligible for an Early Exit and what screening criteria would be appropriate for making such a determination. There was no consensus on what should be included under the term "historical release." In general, a release would be eligible when the degree of uncertainty and risk to receptors are both low. This approach would include an evaluation of the risk to various receptors in the event that the characterization missed some portion of the release. Information to be used in determining the level of uncertainty would include lines of evidence beyond soil samples, such as current or historic groundwater data from existing monitoring networks, site assessment information regarding operations and chemicals used, and site development history.

One example of an eligible historic release would be a release that was cleaned-up and documented to be clean under the current emergency response procedures and generally in accordance with the proposed checklists for the Early Exit approach, but did not previously have a mechanism for a formal sign-off under the current RSRs, or such a release that required supplemental confirmation soil sampling.

Certain sizes of releases could be considered, however the majority consensus was that basing such a determination on the volume of soil removed could be counter-productive by discouraging thorough excavation of releases. Using groundwater classification or the presence of public water could also be considered. It was generally agreed that the current land use would not influence the determination of whether a historic release was eligible for an Early Exit unless so restricted by an existing ELUR or other mechanisms that may be created.

Flowchart

Attached as Appendix A is a Release Evaluation flowchart which presents a decision-making process for how each reportable release would be evaluated. Different stages of the flowchart include whether the reportable release was to the environment (soil, surface water, sediment or groundwater). Then, following immediate risk reduction actions and supplemental short-term remediation, a decision would be made regarding whether there continues to be exceedances of remedial criteria and whether pollution has the potential to migrate away from the area of the remedial activities. Each decision box would have a checklist to direct the environmental professional in making the technical decisions and to ensure consistency. It includes suggestions on who would have the authority to certify completion of the requirements for various Early Exit options and timeframes for those various options.

Evaluating Risks with Checklists

As was mentioned previously, instructions will need to be provided to create consistency in the interpretation of data collected to determine the eligibility of a release for an Early Exit. The Work Group focused most of its discussion regarding these checklists on in which situations collection of groundwater quality data would be necessary and what level of groundwater impacts would be acceptable.

Some members of the group felt that it is important to recognize that for many releases it may not be necessary or appropriate for every evaluation factor to be considered before a specific off-ramp can be utilized and closure achieved. Therefore, various stages of the process would have different checklists tiered in such a way that the issues related to later checklists would not be required if it is demonstrated that a specific Early Exit is appropriate in the initial checklist. This would enable releases to exit out of the system at the appropriate time. Simple, low-threat releases would exit the quickest (and have the fewest checklist tiers required). As the complexity of the release and/or the potential threat to receptors increases, more checklist items would need to be addressed.

Certain categories of chemicals which tend to not contaminate groundwater due to their characteristics such as physical properties, chemical properties, lack of mobility, biodegradation or other attenuation factors should be considered with regard to the potential to cause groundwater impacts.

It was agreed that there are some situations where there is no potential for a release to soil to have impacted groundwater.

Items such as the following may be suitable for inclusion on checklists to determine which of the Early Exits is appropriate and for evaluating the potential infiltration of contaminants and the resulting risk:

- Type of contaminants
- Volume of release (new)
- Concentration of release in soil (historic)
- Timing of soil removal
- Topography
- Sensitive receptors
- Geological materials
- Subsurface utilities
- Soil permeability
- Depth to groundwater
- Depth to bedrock
- Precipitation since the release

Instructions will be needed to address issues such as under what circumstances a positive determination of the depth to groundwater would be needed if it was not encountered with the equipment used for during the remedial excavation.

The risk to human and ecological receptors is among several factors to consider when evaluating whether releases that have been promptly addressed should be required to have groundwater quality monitoring. The checklist would identify items which would constitute a risk, for example a potable well within a certain distance of the release. These checklists would play a key role in determining the appropriateness for a release to fit in several of the Early Exit options, for determining the quality of data necessary to make risk-based decisions and for ensuring consistency in how releases are evaluated.

The Work Group felt this program would need to be supported by an improved access to critical potable well databases. These databases do not yet exist, and the current practice of having environmental professionals contact the water utilities, and review assessors maps and health department records for each receptor survey is time consuming and inefficient. For this critical component of the Early Exit program to function properly, it is strongly recommended that a statutory requirement for the creation of a GIS database of all potable wells, private and public, be implemented. This will increase the level of certainty of decisions made in the streamlined assessment and certification of the Early Exit process.

Who Can Sign-Off?

One topic where a consensus could not be reached was determining who should be able to have the authority to certify that a release had met the criteria necessary for an Early Exit, and whether that authority should be limited to certain circumstances for certain types of environmental professionals.

It was felt that the number of reportable releases which will need to be addressed might over-whelm the current LEP community. It was also pointed out that the person certifying the release would probably not have the benefit of subsurface data from wells or borings, and may therefore have to witness the soil excavation process and visually inspect the results before backfilling. Concern was also raised that the cost of a clean-up would unnecessarily increase if an LEP were required to be involved in every residential heating oil release. Since a large number of the reportable releases are unlikely to pose a risk to groundwater quality, it was generally agreed that most Clean-up Contractors, who are already handling this type of release, would likely be qualified to certify the completion of the remediation with certain supplemental training. Since making this type of determination would carry with it a new level of responsibility for those contractors, it was generally agreed that some form of certification or licensing would be appropriate. A minimum number of years of relevant experience would be necessary to apply for such a license. After an application is approved, a 1 to 2 day class potentially followed by some form of documentation of proficiency would be required. It was felt that it would be appropriate for individuals, rather than corporations to hold these certifications.

Suggestions for naming this new authority included, “Qualified Environmental Professional” (QEP), “Early Exit Expert,” “Early Response Professional ,” “Emergency Clean-up Professional”, ”Quick Release Responder,” and “Certified Release Evaluator.”

Some businesses have trained staff that would be able to address small releases where the duration and extent of the release is known. There would be a limited number of scenarios where granting certification authority to employees of the responsible party would be advisable. It was agreed that this approach would cease to be workable as the size and complexity of a release increased.

No consensus was reached regarding whether this new certification would be necessary to supplement a LEP’s license, or if their existing license would “pre-qualify” them with that authority. There were strong opinions expressed from both perspectives.

It was agreed that it would be beneficial for all environmental professionals providing Early Exit certifications to be trained through a program of one or more seminars organized by the DEEP for this purpose. Such training should be suitable for LEP continuing education credits.

To achieve the consistency needed for this program, if it is decided that the authority to make such a certification is already covered by the existing LEP license, such training should be mandatory for both QEPs and LEPs. If it would require a separate license, then the training would not be mandatory for those LEPs who chose to not pursue this additional license. There was no consensus on this recommendation.

DEEP personnel should also have the authority to render an Early Exit certification. There was no recommendation made regarding at what level of hierarchy with the DEEP this authority should reside. It was not recommended that local authorities, such as the Fire Marshall be burdened with this responsibility.

To support this new program, the DEEP would need to provide standardized formats for various levels of Early Exit certification reports and instructions for how they are to be prepared.

No consensus was reached regarding when only an LEP would be able to provide Early Exit certifications, rather than a QEP. The concern was whether the non-LEPs could evaluate groundwater data, in conjunction with the degree of subsurface characterization, to determine there is no impact to groundwater.

The group seemed to have a majority consensus (not all but a majority) that an LEP, DEEP or newly defined QEP would have the ability to manage site work and remedial actions to satisfy the screening checklist and render an Early Exit certification. Additionally, closure reporting must be submitted in a timely manner, including all supporting documentation compiled in a manner suitable to support the decision making process.

Accountability

This new authority would bring with it a new level of accountability for the decisions being rendered. Therefore, the certification program would need to be coupled with an auditing program to assure the integrity of the system. No consensus was reached on the nature of that program. One suggestion was that the authority of the existing LEP Board could be expanded to include supervision of this new program, while another was that it could rest with the DEEP.

In order to validate the certifications for public acceptance, some members expressed a desire to have DEEP either issue an acknowledgement letter or formally accept the certifications with a no audit letter. While this might be feasible for the program for long-term remedial actions, if there will be 10,000 releases per year using the Early Exits that does not seem practical. Also, it is not consistent with the purpose of the Early Exit option as discussed in the Program Outline.

Discussion

Discussion of the recommendations in context of the Comprehensive Evaluation and Transformation of Connecticut's Cleanup Laws:

The group did not consider what constitutes a reportable release, which was a topic for other work groups to address. The consensus of the group was that there should be an appropriate threshold based on the type and quantity of material released, below which no reporting, no further action and no early exit is necessary.

The Program Outline states that "Once the release has been remediated, the responsible party certifies … that the release or potential release no longer creates any condition that would pose a risk". This Work Group feels that the Responsible Party is not qualified to make such a certification on their own and so it should be a qualified specialist who is hired to make that certification on behalf of the Responsible Party.

If the approach to use a new licensing program for Early Exit certifications is chosen, a statutory change would be needed to create the framework to support it.

It is strongly recommended that a statutory requirement for the creation of a GIS database of all potable wells, private and public, be implemented. At a minimum, a process needs to be put in place to facilitate access to water company records to those certified to do this work.

The Work Group expects that the updated remediation standards would include, 1) provisions for waiving groundwater monitoring in circumstances where a validated Conceptual Site Model indicates that there is no potential for a release to have "impacted" groundwater, and 2) more tiers of numerical soil and groundwater criteria which consider a wider range of uses.

The current 45 day waiting period for public notice of remediation required by the RSRs will not work using a 90 day limit. For releases that are fully remediated this should not be a major issue. Suggestions were made that contamination might be allowed to remain in place through risk assessment calculations under an Early Exit. If this option was contemplated, consistency with public comment requirements would need to be evaluated.

The current RSR requirement for long-term monitoring would not work for an Early Exit.

Ninety (90) days seems to be a consensus based upon: reasonableness for completing a scope of work and the DEEP Emergency Response Unit's deadline for referring cases to other units. However, the technical basis for selecting 90 days as the optimum Early Exit timeframe is still open for further discussion.

Concern was expressed that homeowner clean-ups be handled differently than commercial / industrial clean-ups due to financial limitations, but no consensus was reached.

How could an Early Exit be handled if there are no specified RSR criteria for a chemical and would the approach be different when the additional polluting substance had a low risk of toxicity?

Will all reportable releases require clean confirmation samples for mass and leachability analyses from a certified fixed laboratory?

What can be learned from programs in other states regarding how to decide if there is a need to investigate whether there was a release to groundwater? How fast is the contaminant going to be able to infiltrate? How will that vary with different types of contaminants, releases, and settings?

How to deal with "releases" that are currently less than the reportable release triggers that would be discovered during subsequent site assessments? (There will still be a need for sellers to be able to verify an entire site has been investigated and remediated.)

How does the concept of abating immanent hazard risks fit into the sign-off?

How would the Early Exit approach address releases that occurred on soils that were already polluted? (How would the limits of one release be determined for a release based sign-off?)

Since one of the benefits of an Early Exit is a quick completion, what would an appropriate timeframe be for auditing the certification?

Other related topics discussed that require additional evaluation or refinement:

The State will need to create an Early Exit certification program with training seminars, instructions and licensing.

DEEP will need to create standardized formats for Certification reports.

DEEP will need to create checklists for various steps in the assessment flow charts.

Stakeholders should be encouraged to be involved in the process of creating these checklists.

Could the Early Exit approach apply to releases where:

- Active manufacturing units cannot be directly assessed?
- Portions of an active gas station are likely to have minor recontamination due to normal operations?
- There is a thin layer of unrecoverable LNAPL (separate-phase product) which can be addressed through a risk-driven approach?

Under what conditions would groundwater monitoring data be needed to support an Early Exit certification?

- In cases where the collection of groundwater data is necessary, would all releases need to achieve groundwater concentrations below method detection limits or background concentrations?
- In cases where background concentrations exceed applicable criteria, what level of characterization would be needed to confirm that it is unrelated to the release?
- In cases where contaminants are detected at trace levels, under what circumstances could an Early Exit be allowed without follow-up monitoring?
- How would this be handled in cases where tank grave dewatering was used to fully remove a new spill so that no lateral migration of contaminants had occurred or for PCB releases from submersible pumps in domestic wells?

Discussion of how these recommendations may be affected by other subject matter or details of the transformation:

Other Work Groups' work products will be key to implementation. This would include:

- Determining what a reportable release would consist of;
- What numeric remedial criteria are necessary to achieve closure;
- The availability of sign-offs for releases for which a validated Conceptual Site Model does not require extended (or any) groundwater quality monitoring.

How to address a new release sign-off on a site already under order or in a clean-up program?

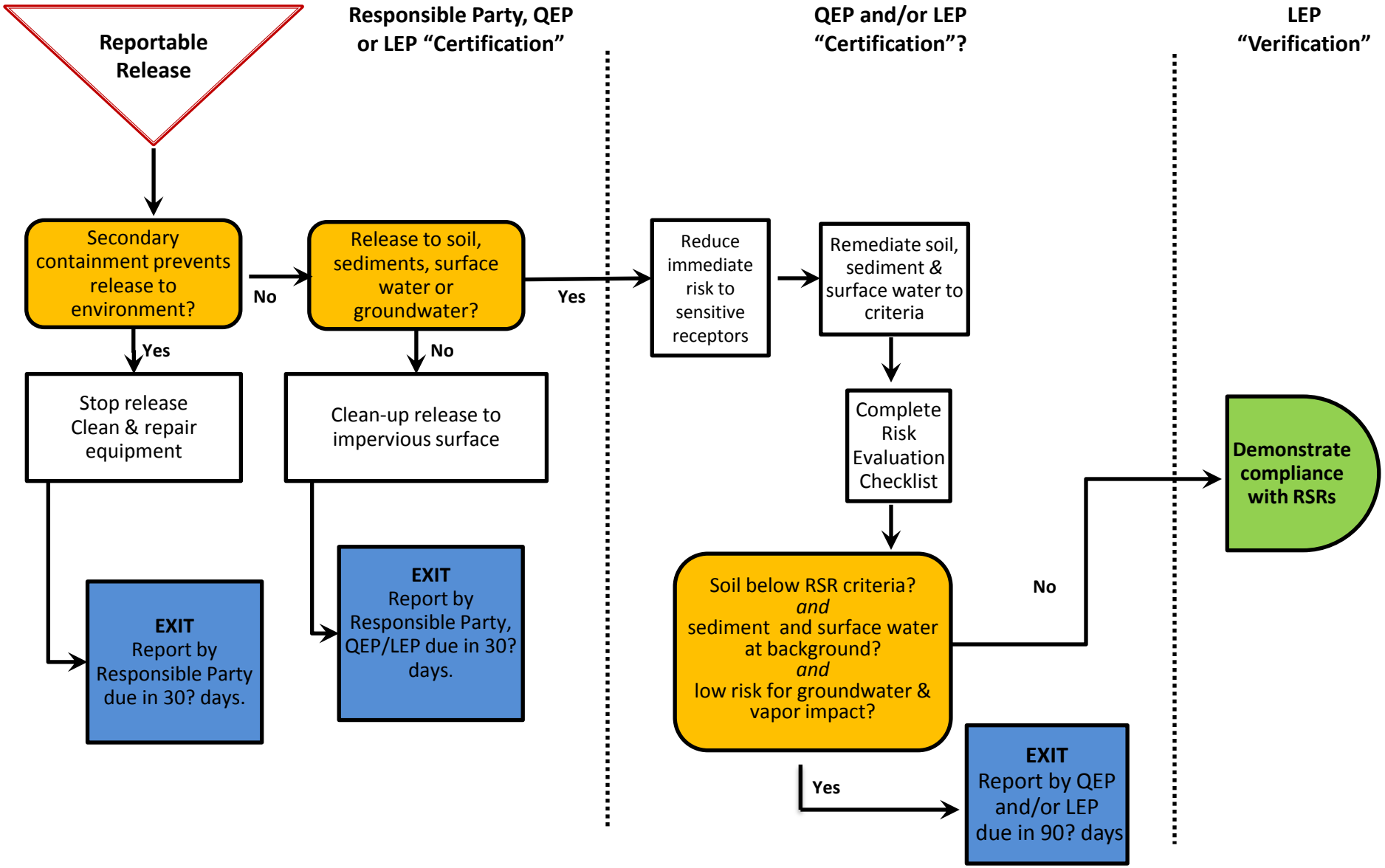
If a site-wide verification were made in the future using the Early Exit certification, would it become subject to review again under the timeframe for that new audit?

If TPH in urban environments must be dealt with as a volatile organic, then remediation of these releases will become a major bottleneck.

Appendix A – Decision Tree Flow Chart

Appendix A

Remediation Transformation
Early Exit Workgroup
Release Evaluation Flow Chart



QEP = "Qualified Environmental Professional"
LEP = Licensed Environmental Professional