**Ecological Receptor Exposure Pathway Scoping Checklist Interim Final: November 7, 2013**

**U.S. Environmental Protection Agency (EPA) Region I - New England Resource Conservation and Recovery Act (RCRA) Corrective Action**

**Facility Name:** Enter Facility Name

**Facility Address:** Enter Facility Address, Town

**EPA ID #:** Enter EPA ID

**Purpose:**

This checklist (“the Scoping Checklist”) is designed as a scoping tool to help EPA Region I RCRA Corrective Action project managers determine whether there is the potential for complete exposure pathways between releases of hazardous waste or hazardous constituents at or from the facility and ecological receptors (i.e., plants and wildlife).

# Intended Use:

EPA Region I RCRA Corrective Action program has recognized a need for a tool to guide its review of existing facility information pertaining to ecological risk assessment. The Scoping Checklist is intended to guide the review of available information on environmental conditions at a facility to determine whether an ecological risk assessment, beginning with a Screening Level Ecological Risk Assessment (SLERA), is necessary and to focus further data collection for the SLERA. Acknowledging that the process may iterative, it is important that the Scoping Checklist be completed early in the RCRA Corrective Action process so that data quality objectives can be developed for collecting the type, quality, and quantity of data needed for a SLERA. If complete ecological exposure pathways are identified, an EPA or state ecological risk assessor should be involved in the planning of subsequent site investigation and ecological risk assessment activities. In the unlikely event that the outcome of completing the Scoping Checklist is that there are no complete ecological exposure pathways, the EPA or state program must be consulted to review and approve such a determination. If some form of ecological risk evaluation has been completed previously at the facility (e.g., under another state program), the Scoping Checklist can also be a useful tool for referencing previously completed work and identifying any further data gaps.

Some state environmental agencies in New England have developed, or are in the process of developing, their own checklists or other tools for scoping ecological exposure pathways.

Although EPA Region I believes the use of this Scoping Checklist may be comparable and complementary to other existing scoping tools used by states, the format and content of this version of the EPA Region I Scoping Checklist may differ from such state tools. Accordingly, this Scoping Checklist is designed primarily for use to support EPA Region I RCRA Facility Managers and their agents.

The Scoping Checklist is considered a public document and, once completed for a given facility, may be included in the facility file. As a public document, the Scoping Checklist may be shared with states, the regulated community, or the public for informational purposes.

# Instructions:

All available relevant/significant information on known and reasonably suspected contaminant releases at or from the facility to soil, groundwater, surface water/sediments should be considered in completing the Scoping Checklist.

Each page of the Scoping Checklist includes a series of questions to be answered by the project manager completing the Scoping Checklist. **In the “rationale and reference” section on each page, the project manager should summarize the supporting information used to answer the questions and clearly reference the document, as well as the page number, table number or figure number where the supporting data can be found. Rationale and references should be clear and specific so that the findings of the Scoping Checklist are transparent and able to be reproduced.** Based on the answers to the questions on each page, the project manager can complete the “Preliminary Ecological Risk Evaluation” section of the Scoping Checklist.

If the answer to any of the questions in the Preliminary Ecological Risk Evaluation section is “yes”, the project manager should consult an EPA or state ecological risk assessor for further information. In this case, an ecological risk assessor should be involved as early as possible in planning the site investigation and specifically further ecological risk assessment requirements, beginning with a SLERA. If the answer is “no” to all three findings in the Preliminary Ecological Risk Evaluation section, the Scoping Checklist must be reviewed by the EPA or state program to verify the finding that complete pathways for contaminant exposure to ecological receptors are not reasonably expected at the facility, based on the data used in completing the Scoping Checklist. Following its completion and approval by the EPA or state program, the Scoping Checklist should be included in the facility file to document the rationale for consulting an ecological risk assessor and focusing any subsequent ecological risk assessment, or the rationale for obtaining EPA or state program approval not to proceed with a SLERA.

# Note. Please be advised that new data or new information could alter the findings and conclusions of this Scoping Checklist. The Scoping Checklist should be revisited if new information that might change the Scoping Checklist findings becomes available. Completion of this Scoping Checklist is not intended to substitute for a SLERA or a Baseline Ecological Risk Assessment (BERA). Findings, documented by this Scoping Checklist that ecological exposure to facility contaminants is not expected, are not considered final until a site-wide remedy decision made by EPA or a state environmental agency authorized for RCRA Corrective Action results in the termination of interim status of a facility or satisfaction with the conditions of a hazardous waste operating or post- closure permit.

**REVIEW OF FACILITY INFORMATION & CONCEPTUAL SITE MODEL**

**In order for ecological risks to exist there must be a potential for exposure of ecological receptors to contaminants. This portion of the evaluation is designed to assist in the identification of contaminated environmental media associated with a site.**

# Based on a review of the file and an understanding of the conceptual site model for the facility, please identify the environmental media present on or adjacent to the facility property which are known or reasonably expected to be impacted by contaminants from the facility. Place a check mark next to the media type. Additionally, please evaluate the potential for migration of contaminants from the site. Potential migration pathways include surface water flow, run off, groundwater flow, erosion, placement of fill and discharge locations. Please attach a figure of the site showing areas of potential contamination.

**Media Potentially Affected by Facility Operations:**

[ ]  Soil

[ ]  Sediment

[ ]  Surface Water

[ ]  Ground Water

**Potential for Migration**

[ ]  Yes / No [ ]

[ ]  Yes / No [ ]

[ ]  Yes / No [ ]

[ ]  Yes / No [ ]

**Migration Pathways**

Identify migration pathway

Identify migration pathway

Identify migration pathway

Identify migration pathway

**Rationale and References:** (Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found)

List document names, dates, and specific reference

**HABITAT DOCUMENTATION**

In order for ecological risks to exist there must be a potential for ecological receptors to come into contact with contaminated media. This portion of the evaluation is designed to assist in the identification of potential presence of environmental receptors associated with a site. It is predicated upon the assumption that if suitable habitat exists, then ecological receptors could potentially be present.

Please check the potentially impacted habitats present on, adjacent to, or immediately downgradient of the facility based on a site visit and an understanding of the site conceptual model. Also, indicate for each habitat whether the presence of site-derived contamination has been confirmed, is suspected, is not expected, or is unknown.

|  |
| --- |
| **Table 1: Summary of habitats and presence of Site-derived contamination** |
| **Habitat type** | **Location** | **Presence of Site-derived contamination** |
|  | **At the sitea** | **Adjacent/ downgradi ent to the siteb** | **Not present** | **Confirmed** | **Suspected** | **Not expected** | **Unknown** |
| **MARINE/ESTUARINE ENVIRONMENTS** |
| Salt marsh |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Tidal rivers & streams |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Exposed mudflats |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Seagrass beds |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Rocky shoreline |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Other\* |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| **FRESHWATER ENVIRONMENTS** |
| Wetlands |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Lakes & ponds |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Rivers and streams |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Vernal poolsc |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Other\* |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| **TERRESTRIAL ENVIRONMENTS** |
| Wooded |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Transitional |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Open field |[ ] [ ] [ ] [ ] [ ] [ ] [ ]
| Other\* |[ ] [ ] [ ] [ ] [ ] [ ] [ ]

a “at the site” is defined as within the limits of the site perimeter or site fence

b “adjacent to the site” is more loosely defined as terrestrial or aquatic habitat present in the immediate vicinity of the site

c “vernal pool” refers to a temporary body of standing water often located in terrestrial habitat which appears in early spring but typically dries out by late spring-early summer. This type of habitat can be suitable and is critical for particular receptor groups, e.g. amphibian reproduction

\* provide additional details

**Habitat Documentation Rationale and References:** (Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found.)

List document names, dates, and specific reference

**EXPOSURE ASSESSMENT**

In order for there to be a potential for ecological risks to occur at a site, there must be a potential for stressors, in this case chemicals, to be present where ecological receptors could come in contact with them. After reviewing the previous pages on Facility Information and Habitat Documentation, plus additional facility information as necessary, please answer the following questions in order to determine if ecological receptors are known or could reasonably be expected to be exposed to contaminants at or from the facility. **If any contaminant concentration data showing non-detect results are used to conclude that an environmental medium is not contaminated, please consult an EPA or state ecological risk assessor to confirm that analytical methods used were adequate to detect contaminants at concentrations below levels of concern for possible ecological receptors. Contaminants that have the potential to bioaccumulate cannot be eliminated from further consideration through the use of this Scoping Checklist. Bioaccumulating contaminants must be carried through the ecological risk assessment.**

**Surface Water Bodies**

***Sediments***

1 a. Is sediment in surface water bodies known or reasonably expected to be contaminated due to releases at or from the facility? Releases from a facility may include but are not limited to: point source discharges, run-off from contaminated soil, groundwater migration, erosion, filling or aerial deposition resulting from air emissions. **Note: If sediment samples are taken adjacent to or downstream of the site, collection should take place in depositional areas present.**

**Yes** [ ]

**No** [ ]

(Complete the remaining questions in this checklist and check “Yes” in Surface Water Body Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

(Proceed to question 1b.)

***Surface Water***

1b. Is surface water known or reasonably expected to be contaminated due to releases at or from the facility? Releases from a facility may include but are not limited to: point source discharges, run-off from contaminated soil, discharge of contaminated groundwater, groundwater migration or aerial deposition resulting from air emissions.

(Note: for surface water, total metals data is more conservative and therefore is more appropriate for use in a SLERA. However, dissolved metal data from analysis of filtered water samples is a more appropriate indicator of exposure and would be useful in any subsequent assessment, such as in the BERA as long as it is representative of current conditions.

**Yes** [ ]

**No** [ ]

(Complete the remaining questions in this checklist and check “Yes” in Surface Water Body Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

(Proceed to question 1c.)

***Groundwater***

1. c. For groundwater discharging to surface water, is groundwater, at the point of discharge to the surface water body, known or reasonably suspected to be contaminated due to releases at or from the facility? Note: Because of the ability of certain sediments to accumulate contaminants, the need for sediment sampling in a water body should not be ruled out based on concentrations of suspected site related contaminants found to be below ecologically based ambient surface water quality criteria in groundwater which intersects surface water bodies.

**Yes** [ ]

**No** [ ]

(Complete the remaining questions in this checklist and check “Yes” in Surface Water Body Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

(Complete the Surface Water Bodies Rationale and References section directly below, then proceed to the Surface Soil Section below.)

**Surface Water Bodies Rationale and References:** (Please summarize the rationale for the answers provided in the “Surface Water Bodies” section above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/ or qualify the finding.)

Summarize the surface water bodies rationale

# Surface Soil

1. a. Is surface soil (found at depths of 2 feet or less from the surface) known or reasonably expected to be contaminated due to releases at or from the facility?

**Yes** [ ]

**No** [ ]

(Proceed to question 2 b.)

(Complete the Surface Soil Rationale and References section and the remaining questions in this checklist, then check “No” under Surface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

2 b. Is all contaminated surface soil covered with buildings, pavement or other physical barriers that prevent plants or wildlife from being exposed to contaminants and the soil is not expected to be contacted by seasonal groundwater so that migration of soil contamination into groundwater that could affect a surface water body is prevented?

**Yes** [ ]

**No** [ ]

(Proceed to question 2 c.)

(Complete the Surface Soil Rationale and References section and the remaining questions in this checklist, then check “No” under Surface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

1. c. Is an institutional control in place to ensure the maintenance of the barriers described above so that receptors will not be exposed to contaminated soil (i.e., ensuring that soil will not be exposed as a result of excavation, demolition or other activities and that pavement or other physical barriers will be maintained in good condition and that if soil is exposed, appropriate measures will be taken to address any ecological risks).

**Yes** [ ]

**No** [ ]

(Complete the Surface Soil Rationale and References section and the remaining questions in this checklist, then check “No” under Surface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

(Complete the Surface Soil Rationale and References section and the remaining questions in this checklist, then check “No” under Surface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

**Surface Soil Rationale and References:** (Please summarize the rationale for the answers above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/or qualify the finding.)

Summarize surface soil rationale

# Subsurface Soil

1. a. Is subsurface soil (found at depths greater than 2 feet from the surface) known or reasonably expected to be contaminated due to releases at or from the facility?

**Yes** [ ]

**No** [ ]

(Proceed to question 3 b.)

(Skip to the Subsurface Soil Rationale and References section then complete the remaining questions in this checklist, and check “No” under Subsurface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

3 b. Are the contaminated subsurface soils located in a setting where they could be exposed by erosion or that subsurface soil contaminants could be mobilized and transported via groundwater to a surface water body?

**Yes** [ ]

**No** [ ]

(After completing the Subsurface Soil Rationale and References section and the remaining questions in this checklist, check “Yes” under Subsurface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

Engineering controls are in place. (Proceed to question 3c.)

3 c. Is an institutional control in place to ensure that contaminated soil will not be brought to the surface, as a result of excavation, demolition or other activities and, if applicable, to ensure that engineering controls are maintained and that if contaminated soil is exposed, appropriate measures will be taken to address ecological risk?

**Yes** [ ]

**No** [ ]

(After completing the Subsurface Soil Rationale and References Section and the remaining questions in this checklist, check “No” under Subsurface Soil Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

(After completing the Subsurface Soil Rationale and References Section and the remaining questions in this checklist, check “Yes” under Subsurface Soil Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

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**Subsurface Soil Rationale and References**: (Please summarize the rationale for the answers above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/or qualify the finding.)

Summarize subsurface soil rationale

# PRELIMINARY ECOLOGICAL RISK EVALUATION

**Surface Water Body Finding:**

Based on the information provided above, is a SLERA necessary as a screening step to evaluate the risks to ecological receptors from contaminants in surface water or sediments of surface water bodies?

**Yes** [ ]

**No** [ ]

(Check “Yes” if the response to any of the questions above regarding Surface Water Bodies is “Yes”)

(Check “No” if the response to all of the questions above (1a, 1b, and 1c) regarding Surface Water Bodies is “No”)

**Surface Soil Finding:**

Based on the information provided above, is a SLERA necessary as an initial step to evaluate the risks to ecological receptors from contaminants in surface soil?

 **Yes** [ ]  **No** [ ]

**Subsurface Soil Finding:** Based on the information provided above, is a SLERA necessary as an initial step to evaluate the risks to ecological receptors from contaminants in subsurface soil?

 **Yes** [ ]  **No** [ ]

Based on the information provided on the preceding pages, check the appropriate response:

[ ]  **The answer was “No” for all three of the findings in this checklist** (i.e., the Surface Water Body Finding, the Surface Soil Finding and the Subsurface Soil Finding). Therefore, based on the data considered in this checklist, ecological exposure to contaminants at or from the facility, EPA ID # , located at is not reasonably expected and further ecological risk assessment does not appear necessary**. Please ensure that supporting information used to answer the questions in this Scoping Checklist is summarized in the “rationale and reference” section on each page. Please also list the document title, as well as the page number, table number or figure number, where the supporting data can be found. Rationale and references should be clear and specific so that the findings of the Scoping Checklist are transparent and able to be reproduced.**

# Note: Releases from the facility must be adequately characterized, in accordance with EPA guidance, in order to make this determination. This Scoping Checklist should be revisited if new information, that would alter the Scoping Checklist findings, becomes available. In addition, the finding that ecological exposure to facility contaminants is not expected is not considered final until a site-wide remedy decision made by EPA or a state environmental agency authorized for RCRA Corrective Action results in the termination of interim status of a facility or satisfaction with the conditions of a hazardous waste operating or post-closure permit.

[ ]  **The answer was “Yes” for any of the findings in this Scoping Checklist** (i.e., the Surface Water Body Finding, the Surface Soil Finding and the Subsurface Soil Finding). Therefore, a SLERA is recommended for the facilityEnter Facility Name, EPA ID # Enter EPA ID, located at Enter Facility Address, Town**.**

An EPA or state ecological risk assessor should be involved as early as possible to verify Scoping Checklist finding and, if necessary, in planning the SLERA. This Scoping Checklist should be provided to the EPA or state program ecological risk assessor to focus the SLERA on the potential exposure pathways. In addition, information and guidance is available on EPA's website [http://www.epa.gov/risk/.](http://www.epa.gov/risk/)

Completed by:

(signature)

Name: Signatory name

Title:Signatory title

Date: Click or tap to enter a date.

Locations where References may be found: Provide locations of references