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Technical Impracticability Waiver

An Underutilized Tool for Sediment Management

Christopher Sinton, Andrew Halmstad, Stephen Bentsen, Nicole Ott (Integral)

Debbie Dietz Silva (Oregon Steel Mills)

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Sediment Management Work Group
Fall Sponsor Forum

Outline

- Review of cleanup levels (CULs) at Superfund sites
- Origin and History of Technical Impracticability Waivers (TI Waivers)
- Application of TI Waiver to Portland Harbor Superfund site for arsenic in riverbank soil and sediment

CUL for each Medium–COC Combo = highest value among:

1

ARAR/Risk-Based

Promulgated standard or HH/eco risk-based site-specific

2

Background

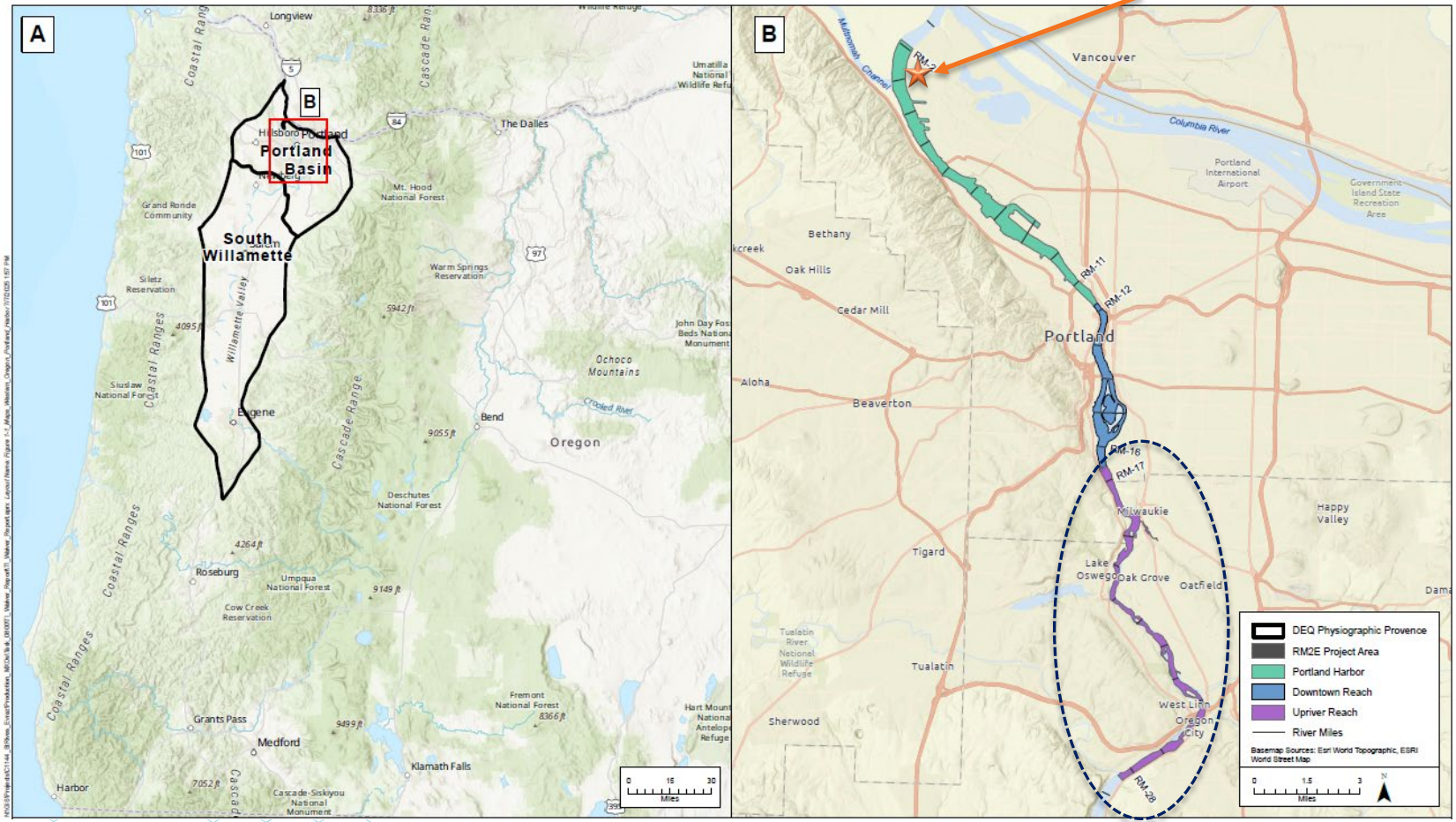
Naturally occurring and anthropogenic

3

Practical Quantitation Limit

3 mg/kg sediment and riverbank soil

TI Evaluation for Portland Harbor RM2E Project Area



Arsenic is a naturally occurring element in bedrock, soils, and sediment

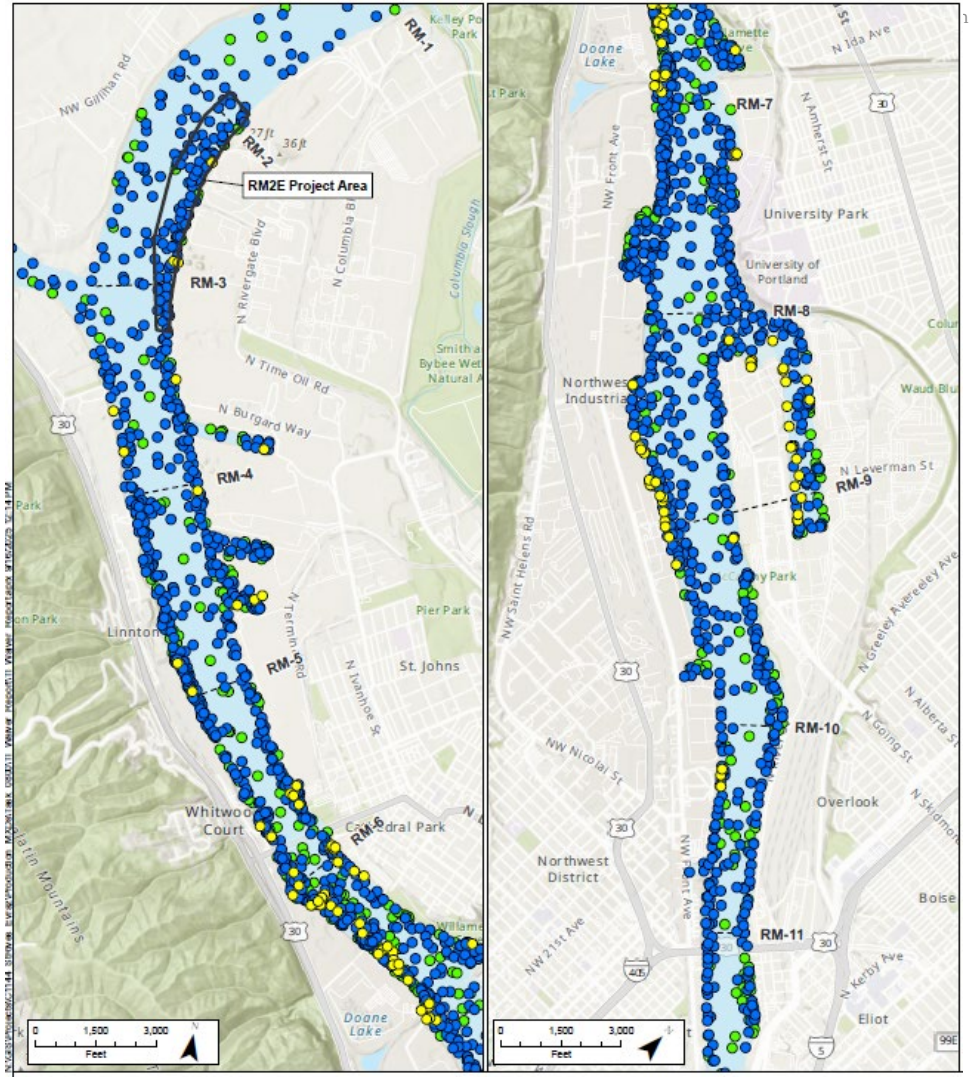
Yamhill mudstone and Columbia River Basalts in West Linn; source: Wells et al. 2020. Geologic Map of the Greater Portland Metropolitan Area and Surrounding Region

RM2E	Average Detected (mg/kg)	ROD CUL Exceedance
Sediment, all depths	4.2	**82%**
Riverbank Soil	3.9	**65%**

Portland Harbor, Upstream of RM2E, RM 3.2 to 11.8	Average Detected (mg/kg)	ROD CUL Exceedance
Surface Sediment	4.8	**72%**

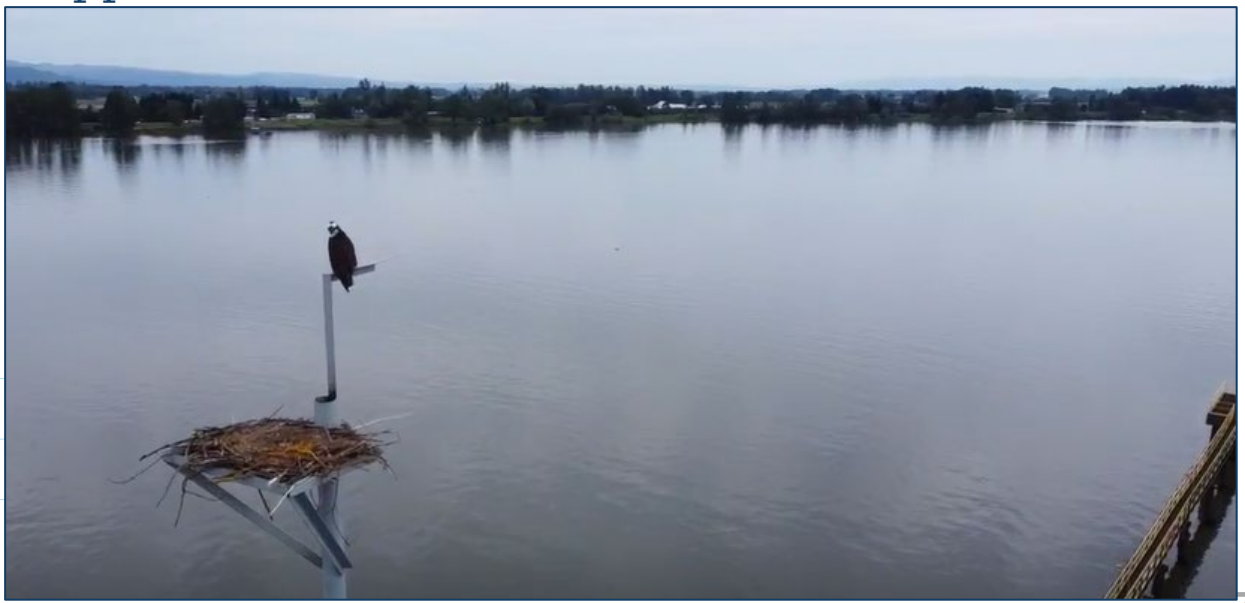
Arsenic in Surface Sediment (mg/kg)

- ≤3
- >3–8
- >8



Sediment CULs are meaningful in Portland Harbor

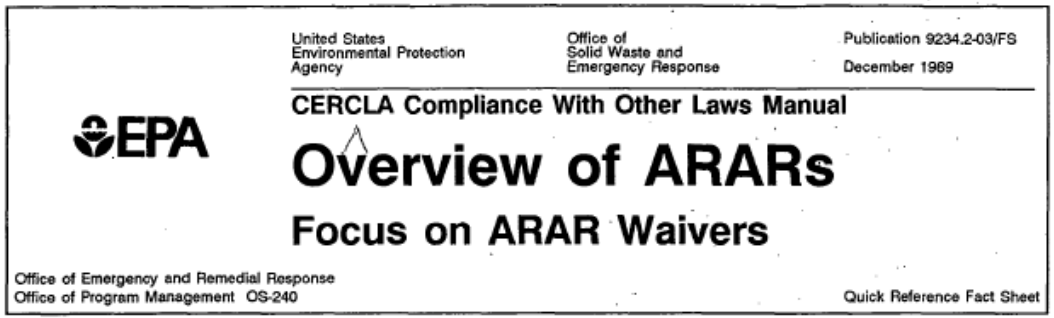
- CULs are long-term goals for within 0.5- and 1-river mile areas.
- Need to demonstrate CULs are met in chemical stability modeling of buried contamination and capped areas.
- Import material needs to meet CULs.



Osprey and nest over RM2E; drone footage

What if CULs cannot be met?

- EPA can issue:
  - Erratum
  - Explanation of significant differences
  - ROD amendment
- Parties can apply for a ***TI Waiver***
  - Party drafts an evaluation
  - EPA considers evaluation
    - option to draft a waiver



United States Environmental Protection Agency

Office of Solid Waste and Emergency Response

Publication 9234.2-03/FS

December 1989

EPA

CERCLA Compliance With Other Laws Manual

Overview of ARARs

Focus on ARAR Waivers

Office of Emergency and Remedial Response
Office of Program Management OS-240

Quick Reference Fact Sheet

TI Waiver

- **1990 National Contingency Plan revision introduced technical impracticability**

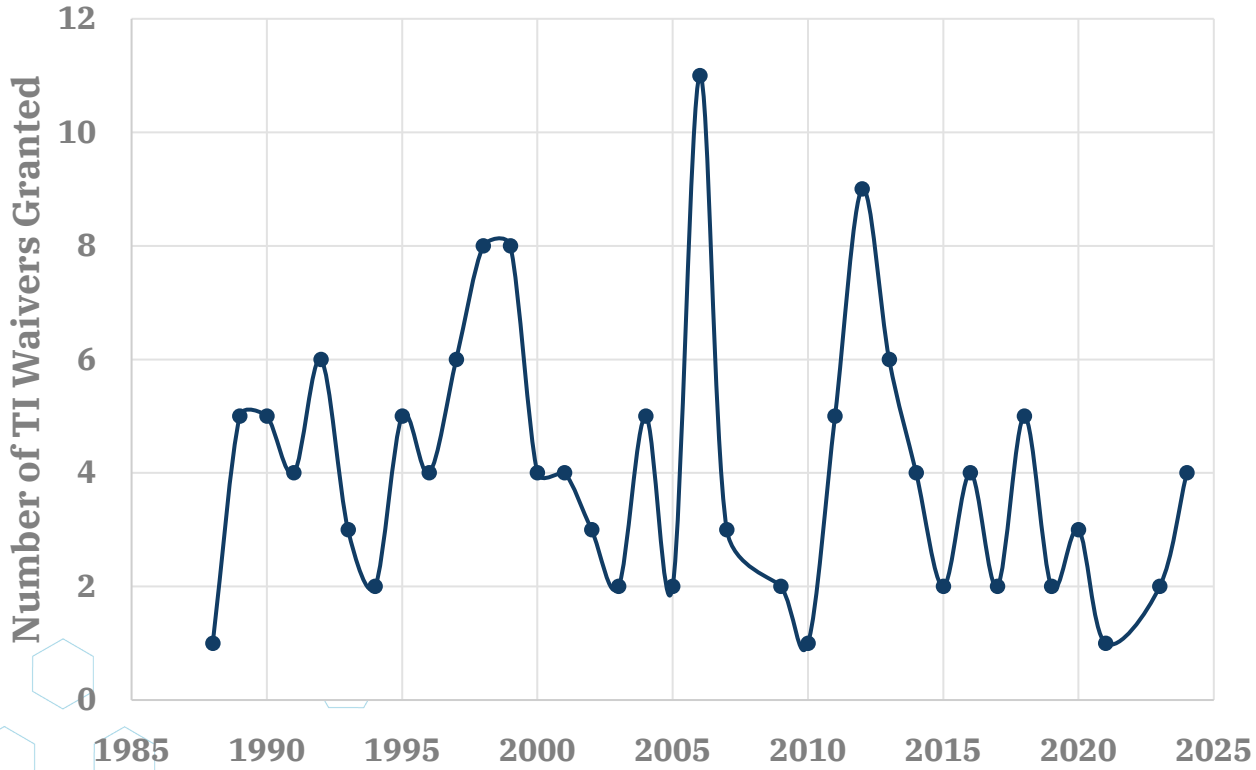
  40 CFR §300.430(f)(1)(ii)(C)

  - "An alternative that does not meet an ARAR under federal environmental or state environmental or facility siting laws may be selected under the following circumstances:"

    (*3*) Compliance with the requirement is technically impracticable from an engineering perspective;

- **1993 EPA Guidance on TI Waivers for Groundwater**
- **2016 EPA Clarification Memorandum**

Technical Impracticability Waiver Historical Use



Source: EPA TI Waiver Mapping Tool https://experience.arcgis.com/experience/7a7ca00c31d94af194d8b5c392a913d8/

TI Waiver Mapping Tool

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TI Evaluation Report Submission

EPA

Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration

RECOMMENDED SUMMARY CHECKLIST FOR A SUPERFUND GROUNDWATER TECHNICAL IMPRACTICABILITY EVALUATION

Site Name/OU _____ **Version** _____

Name of Preparer/Reviewer _____ **Date** _____

Regions should consider the recommended checklist below when evaluating whether they have sufficient information to support a TI evaluation for the administrative record. [EPA 1993, 4.4]:

A. Specific ARARs or Media Cleanup Standards [EPA 1993, 4.4.1]

- ☐ Identifies the specific ARARs for which the TI waiver is sought (TI eval. pp._____)
- ☐ Identifies the technical feasibility of restoring some of the groundwater contaminants (TI eval. pp._____)
- ☐ Identifies potential benefits of attaining ARARs for some of the specific COCs (TI eval. pp._____)

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Conclusions

- Arsenic riverbank and soil CUL of 3 mg/kg cannot be met in Portland Harbor Superfund site because it is below background concentrations.
- The Oregon DEQ background value of 8.8 mg/kg for soil is more appropriate and attainable.
- RM2E Project Area is using the TI Waiver process to obtain the first sediment waiver.


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Upstream of Portland Harbor	Average Detected Result (mg/kg)	ROD CUL Exceedance %
Downtown Reach Surface Sediment	4.5	**49%**
Upriver Reach Surface Sediment	3.5	**66%**