



Sediment Cleanup Users Manual II Technical Workshop (3rd of 3)

August 7, 2014

WA Department of Ecology
Toxics Cleanup Program

Goals and Objectives

- Communicate specific policy and technical issues identified during SCUM II public comment period
- Focus on this subset of issues at the workshops
- Collaboratively work to help Ecology resolve identified issues
- Engage in thoughtful discussion to elaborate on ideas proposed by commenters
- Ecology to come away with well thought out ideas to help finalize the guidance document

A Few Guiding Principles

- Focus on the main thing and ensure the main thing remains the main thing
- This is a limited and focused discussion on key unresolved issues
- Work to understand the needs or viewpoints of others to lead to workable solutions
- Have fun

Workshop Format

- Communicate what we plan to work on in the guidance
- Introduce key unresolved issues for discussion
- Pose specific questions to consider related to the issues
- We will record ideas and solutions for resolving the key issues under consideration to help finalize the guidance

Introduction

- In part, the SMS rule was revised to provide a more implementable cleanup framework for sites with bioaccumulatives because of:
 - Increased costs to cleanup to low levels
 - Inconsistency with cleanup decisions
- Key features of the revised SMS rule:
 - Recognition that cleanup is one key part of a broader strategy
 - Provide incentives to get cleanup done and minimize the lengthy process:
 - Regional background, cleanup units, recontamination clause
 - Integrate cleanup with broader source control and prevention measures to reduce contaminant concentrations to natural background or risk values:
 - PLP source control, sediment recovery zones, post cleanup monitoring

Why We're Doing What We're Doing

- Implementing the revised SMS rule includes incorporating and considering a range of scientific, policy, and practical issues.
- The rule and draft guidance attempt to reasonably balance:
 - Flexibility and predictability
 - False positives and false negatives
 - Short term cleanup actions and longer term source control and prevention measures
- Based on the comments, we need to improve on this attempt to better reflect the rulemaking goals and objectives

Acknowledgements

Department of Ecology

Chance Asher

Laura Inouye

Russ McMillan

Dave Bradley

Pete Adolphson

Pete Kmet

Craig McCormack

Ivy Anderson

Technical Consultants

Teresa Michelsen, Avocet Consulting

Chris Waldron, Pioneer Technologies

Lorraine Read, TerraStat Consulting

Mike Ehlebracht, Hart Crowser

Roger McGinnis, Hart Crowser

Taku Fuji, Anchor QEA

Lon Kissinger, EPA

SMS Advisory Group Members

Issues / Themes

- **Burdensome process:** Cleanup process too burdensome due to more conservative requirements (cleanup levels, assessments)
- **Feasibility:**
 - New SMS rule more conservative
 - SCUM II incorporates more conservative assumptions than the already conservative SMS rule
 - Resulting in unattainable cleanups
- **Streamlined process:** Develop more streamlined processes to get cleanup done, reduce risk, and provide finality for PLPs

Issues / Themes – Proposed Ideas

- **Streamlined Process:** Determine a process to make cleanup more efficient (for both simple and complex sites)
- **Simple vs. Complex Sites:** Develop a more efficient process for simple sites that is less burdensome than for complex sites
- **Bioavailability:** Incorporate new technologies and assess availability of bioaccumulative CoCs
- **Attaining Compliance:** Develop successful monitoring approach
- **Remedy Selection:** Include more approaches
- **Recontamination:** How to determine if source control is effective

Three Technical Workshops – Topics

July 17, 2014	July 31, 2014	August 7, 2014
<ul style="list-style-type: none"> • Preliminary CSM • Simple or Complex Sites • Screening CoPCs • Use/Need for Tissue Data 	Natural/Regional Background: <ul style="list-style-type: none"> • Statistical Metrics • Regional Background Definition & Approaches 	<ul style="list-style-type: none"> • Establishing Cleanup Levels • Adjusting from SCO
<ul style="list-style-type: none"> • Remedial Investigations: • Simple vs. Complex Sites • Default screening values 	Compliance Monitoring: <ul style="list-style-type: none"> • Area weighted averaging • Point by point • Incremental sampling • Use of tissue data 	Remedy Selection
Bioavailability	Establishing PQLs	Sediment Recovery Zones: Monitoring requirements
Ecological risk assessments		Recontamination: <ul style="list-style-type: none"> • Monitoring for remedy failure/source control • Settling liability

SCUM II - Framework and Reorganization

- **Chapter 1:** SMS rule framework & guidance document organization
- **Chapter 2:** Identification of sites and sediment cleanup units:
 - Default screening approaches for bioaccumulatives
 - Use of sediment background
 - Use of tissue background
 - Use of area weighted averaging for bioaccumulatives

SCUM II - Framework and Reorganization

Chapter 3: Remedial Investigation Workplan and Preliminary

Conceptual Site Model:

- RI goals and objectives
- Develop preliminary CSM for screening purposes
- Evaluate size and complexity of site (simple vs. complex)
- Identify pathways, receptors, and screen CoPCs
- Identify RME – use of default
- Identify exposure areas, site units, and/or sediment mgmt areas
- Identify data gaps

SCUM II - Framework and Reorganization

- **Chapter 4:** Field Sampling Methods
- **Chapter 5:** Chemical and Biological Testing and QA/QC procedures
- **Chapter 6:** Remedial Investigation Report and Data Evaluation:
 - Contents and requirements of RI Report
 - Contents and requirements of human health and eco risk assessments
 - Data treatment methods and data submittal requirements



Establishing Sediment Cleanup Standards

A cleanup standard has two parts:

- A numeric cleanup level which can be established between the SCO and the CSL
- A point of compliance, which may include:
 - A depth of compliance for all exposure types
 - An area of compliance, for area-based exposures

Establishing Sediment Cleanup Levels

What we plan to do (cleanup levels):

- Provide definitions and examples of the two factors that are considered to adjust upward from the SCO: technically possible and net adverse environmental impacts
- Clarify how to conduct this adjustment
- Consider whether multiple cleanup levels and/or remedial action levels should be established for different exposure types

Establishing Sediment Cleanup Standards

What we plan to do (cleanup standards):

- Consider including a spatial point of compliance along with depth for area-based exposures
- Consider whether multiple spatial and/or depth points of compliance are needed if there are multiple cleanup levels or remediation levels for a single COC
- Add site-specific flexibility for human health point of compliance
- Evaluate whether default depths can or should be included for benthic criteria in marine and freshwater environments

Cleanup Levels: Adjusting Upwards from the SCO

Issue	Questions for Discussion
1) Technically possible – ability to meet and maintain cleanup levels	1a) In determining the ability to maintain cleanup levels, should the impact of permitted discharges to the site be considered? If yes, what scrutiny should be given to the permits (e.g., are AKART/permit requirements being met)? 1b) How should regional background (if established) be considered in determining the ability to maintain cleanup levels?
2) Net adverse environmental impacts	2) What types of impacts should be included? <ul style="list-style-type: none">- Damage to habitat/restoration projects- Disruption to communities- Harm to aquatic life- Others?
3) Case studies	3) What types of examples would be helpful?

Cleanup Standards: Area-Based Exposures

Issue	Questions for Discussion
1) Multiple exposure routes for the same chemical	<p>1a) Should separate cleanup standards be set for each individual exposure type or can this be addressed through remedial action levels for different sediment management areas?</p> <p>1b) What are the legal/technical/practical differences between these two approaches?</p> <p>1c) Should this be a site-specific decision?</p>
2) Spatial scale	<p>2a) Does a spatial area of compliance need to be added to the point of compliance along with the depth?</p> <p>2b) For all exposure types or just area-based exposure pathways?</p>

Cleanup Standards: Biologically Active Zones

Issue	Questions for Discussion
1) Benthic receptors	<p>1a) For freshwater environments, what site-specific factors should be considered when establishing a BAZ?</p> <p>1b) Is it helpful to provide a default BAZ for marine and/or freshwater environments? Is it possible for freshwater?</p>
2) Humans and higher trophic level receptors	<p>2a) Is a default BAZ for human health appropriate? Could multiple defaults be established for different exposure pathways or activities?</p> <p>2b) What site-specific factors should be considered when establishing a BAZ for human health?</p> <p>2c) What site-specific factors should be considered when establishing a BAZ for higher trophic level receptors (such as fish and fish-eating wildlife)?</p>



20 Minute Break

Please help yourself to refreshments

Remedy Selection

What we plan to do:

- Consider other approaches in addition to case studies provided
- Revise and clarify rule citations and references to DCA minimum requirements
- Ensure text and references between the chapter and appendix are consistent and references are accurate
- Add text for establishing sediment management areas
- Make discussion on source control consistent with other chapters

Remedy Selection

Based on comments received we propose:

- Incorporating alternative technologies (such as in situ amendments, which is #3 in the hierarchy) in guidance
- Considering criteria that should be considered to include new technologies:
 - Protectiveness
 - Long term effectiveness
 - Permanence

Remedy Selection - Technologies

Issue	Questions for Discussion
1) Hierarchy of technologies	1) Are there site specific conditions that may affect the hierarchy? For example, a site where a specific remedy (such as dredging) would do more environmental harm than good.
2) In situ amendments	2) How should “long term” be defined specific to the monitoring research for relatively new in situ amendments such as activated carbon?
3) Remedies for sites in river environments	3a) What specific issues/technologies apply? For example, specific technologies for erosional environments. 3b) How can continued active cleanup over a period of years be considered?

Remedy Selection – Feasibility Study

Issue	Questions for Discussion
1) Disproportionate Cost Analysis	<p>1a) What alternative approaches should be considered besides the case study examples provided?</p> <p>1b) How should weighting factors for the DCA criteria be determined?</p> <p>1c) What other options are there for evaluating the protectiveness, permanence, and long-term effectiveness criteria? For example, what other metrics could be used for “volume removed” as a measure of protectiveness and permanence?</p>
2) Streamlining FS	2) What options should be considered to streamline the remedy selection and FS process for simple sites and sediment cleanup units.



20 Minute Break

Please help yourself to refreshments

Recontamination

What we plan to do:

- Clarify how and when to identify sources or potential sources of contamination to the site during the RI and assess the risk of recontamination
- Describe monitoring requirements for source control of PLP sources and remedy effectiveness
- Identify technical methods and alternatives for long-term MNR and/or recontamination monitoring
- Provide realistic examples addressing cleanup of legacy contamination and potential ongoing recontamination

Recontamination - Evaluation and Source Control

Issue	Questions for Discussion
1) Evaluating potential for recontamination	<p>1a) To what extent should this be evaluated during the RI? Under what circumstances?</p> <p>1b) Could this vary by simple vs. complex sites and/or site unit status?</p> <p>1c) What if the source is not under the PLP's control?</p> <p>1d) Should this evaluation address the timing of source control work in relation to sediment remedial actions?</p>
2) PLP source control	<p>2a) What RI assessment and monitoring should be conducted to determine if PLP sources are controlled?</p> <p>2b) What level of certainty that PLP sources are controlled is reasonable?</p>

Recontamination – PLP Responsibilities

Issue	Questions for Discussion
1) Use of compliance monitoring data	<p>1a) What elements need to be included in a compliance monitoring plan? Is data showing that the remedy and source control (sources that are under the PLP's control) are effective sufficient?</p> <p>1b) What monitoring requirement is excessive? For example, if the PLPs remedy and sources are shown to be effective for their cleanup , should that PLP be responsible for further monitoring for another entity's source(s) of recontamination?</p> <p>1c) What type of temporal components should be considered (such as trend analysis)?</p>
2) Demonstration of responsibility	<p>2a) How should Ecology respond when data indicates contamination levels at a site are increasing?</p> <p>2b) Is there a reasonable way for a PLP to show the remedy is working, and PLP sources are not causing recontamination above the cleanup level, outside of a compliance monitoring plan?</p> <p>2c) What assurance from Ecology is needed regarding how the agency will respond to recontamination of a site?</p>



Sediment Recovery Zones

What we plan to do:

- Provide more clarification regarding:
 - When an SRZ is required
 - How an SRZ will be issued
 - Who will be involved in the SRZ
 - Requirements for closure of an SRZ
 - Clarify terminology and ensure consistency with other chapters/sections of SCUM II

Sediment Recovery Zones

Issue	Questions for Discussion
1) SRZ monitoring	<p>1a) How do monitoring needs or approaches differ from the compliance monitoring plan? Can SRZ monitoring be combined with the compliance monitoring plan, or should they be separate?</p> <p>1b) How much predictive modeling and/or monitoring is needed to establish expectations for the SRZ?</p>
2) SRZ closure	<p>2a) In addition to meeting the cleanup standards, are there additional issues that should be considered for SRZ closure?</p> <p>2b) What options exist for SRZ closure if it does not appear that the cleanup standards can be met, even over the long term?</p>



A Brief Recap on Actions in Response to What We Heard

- Project Scoping: Provide more detail on developing and using the CSM in an iterative evaluation process
- Project Streamlining. Develop a more streamlined process for conducting RI and remedy selection for sites by providing options and examples for:
 - Default screening values
 - Use of tissue data
 - Use of background as a cleanup level
 - Simplified risk assessments
 - Use of indicator hazardous substances linked with a feedback loop during remedy selection.

A Brief Recap on Actions in Response to What We Heard

- Guidance Integration. There several opportunities to cross-reference new or soon-to-be released EPA and ITRC guidance documents.
- Project Requirements.
 - Provide more clarity for establishing PQLs (definitions etc)
 - Continue to improve upon establishing regional background so it is more representative of influence of storm water (statistical metric, alternate proposal, common principles, public process)
 - Provide more clarity on how a PLP can be done with a cleanup when facing the potential for recontamination

SCUM II – The next steps

- Ecology staff and managers will evaluate the feedback received during the comment period and workshops to determine:
 - Issues and substantive revisions that can be addressed between now and December 2014.
 - How to incorporate details of the feedback received to make the guidance more effective, technically sound, and reader friendly.
 - Staffing and resources needed to complete this work.
 - Issues that will require additional time and discussion through separate processes. These processes would inform future updates to the SCUM II document through the SMARM process.

SCUM II – The next steps

- Ecology will post further details on the strategy and timeline for completing the initial SCUM II updates in early fall and provide updates to interested persons through our website:
http://www.ecy.wa.gov/programs/tcp/smu/sed_standards.htm
- We plan to finalize the document in December 2014
- We will provide an update at SMARM 2015
- SCUM II will be updated on a regular basis through SMARM as we learn more through implementation of the SMS rule and SCUM II

For More Information

- **Sediment Management Standards:**

http://www.ecy.wa.gov/programs/tcp/smu/sed_standards.htm

- **Sediment Cleanup Users Manual II:**

<https://fortress.wa.gov/ecy/publications/SummaryPages/1209057.html>

- **Port Gardner Regional Background:**

http://www.ecy.wa.gov/programs/tcp/sites_brochure/psi/everett/pg-sed.html

- **Port Angeles Regional Background:**

http://www.ecy.wa.gov/programs/tcp/sites_brochure/portAngelesHarborSed/background.html

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