

September 8, 2014

WAC 173-350-325, Soil and Sediment Criteria and Use - Workgroup Conference Call

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Agenda

- Discuss revised definitions
- Sampling of receiving site if above table standards for use and want to show receiving site has equal or lesser contaminant limits – be prescriptive or not
- Use of accredited lab
- Approval/self-authorization process – recordkeeping, submittal
- Rule language

Bulleted items that are not italicized are comments from the meeting. *Italicized wording represent the issues discussed.*

Revised Definitions

“Cementitious materials” means Portland cement, fly ash, cement kiln dust, bottom ash, and other cement-like materials, typically used to add rigidity to soils during construction projects such as temporary retaining walls and well construction. Cementitious materials include, but are not limited to, jet grout, k-crete, shotcrete, concrete washout, road grindings, and dewatered drilling slurries containing cementitious materials. Cured concrete is not a cementitious material.

Since last meeting:

- Combined with drilling slurries here.
- Changed rule language to reference “soils” containing cementitious materials.

“Clean soil and clean sediment” means excavated soil and sediment not suspected or known to contain contaminants at concentrations that exceed the standards in WAC 173-350-XXX Appendix ? and includes impacted soil and impacted sediment tested in accordance with section WAC 173-350-325 that meets unrestricted land use contaminant limits in Appendix WAC 173-350-XXX Appendix ?.

Since last meeting:

- Added “excavated” to be clear that definitions are meant for dug up soils, not undisturbed soils.
 - Added “not suspected or known to contain contaminants”. This is to avoid testing/demonstrations for soils unlikely to need it.
 - Added “impacted soil/sediment” that meets criteria for unrestricted land use.
 - Removed references to “threats to human or environmental health”.
- Need to ensure “unexcavated” soils are captured – manufactured topsoil, street waste, piled soils.
 - Instead of “excavated”, consider different term – transported, disturbed, removed, export/import.

“Contaminant” means any chemical, physical, biological, or radiological substance that does not occur naturally in the environment or that will result in concentrations greater than natural background levels at the location where placed.

“De minimus” is an amount so small that it has little affect on the look, quality, use, or impact of a material. Man-made materials such as, but not limited to, paper, plastic, metal, and demolition debris that can be easily removed or may become a litter problem is not de minimus.

- First shot at definition. See “soils” definition. No solid % or number, so is subjective.

- Okay with first attempt. Not sure about “easily” removed.

“Impacted soil and impacted sediment” means excavated soil or sediment suspected or known to contain contaminants at concentrations that may exceed standards in WAC 173-350-XXX Appendix ?. Examples include street waste, petroleum contaminated soil, manufactured topsoil, sediment from water bodies containing contaminants, soil with cementitious materials, soils with naturally high levels of contaminants, and soils likely to have contaminants from industrial or historical activities.

Since last meeting:

- Added “excavated” to be clear that definitions are meant for dug up soils, not undisturbed soils.
 - Added “suspected or known to contain contaminants”. This is to ensure questionable materials follow the rule.
 - Removed references to “threats to human or environmental health”.
- Remove list of examples.
 - Unsure of the use of “may” in exceeding standards, however one shouldn’t assume a soil is clean simply because it has not been tested. The rule is meant to provide authority and guidance for testing a suspect soil.
 - Reconsider “excavated.”

“Manufactured topsoil” means soil or sediment containing solid waste (i.e. impacted soil) and sometimes other amendments to improve the quality of the material for use in establishing vegetation. Soil or sediment containing solid wastes that do not improve the quality of the material to establish vegetation is not manufactured topsoil. If used as fill, material is not manufactured topsoil.

Since last meeting:

- Must keep tie to containing solid waste. Rule can’t apply to topsoil that contains no solid waste.
 - Removed references to “threats to human or environmental health”.
 - Plan to exclude from rule mfr topsoil containing certain kinds of solid waste, such as manure and vegetative materials.
- “Petroleum contaminated soil”** means soil that contains petroleum materials such as, but not limited to, gasoline, diesel fuel, fuel oil.
- New definition.

- Consider adding “from a release or spill.”

“Restricted properties” includes land with access restrictions or barriers that prevent human and animal contact with impacted soils and impacted sediments, and has controls to prevent runoff to surface water. Restricted properties include, but are not limited to, sand and gravel pits regulated by water pollution permits, mining reclamation sites regulated by the WA Dept. of Natural Resources, along major highways and freeways with limited human access and a layer of clean soil or clean sediment or other landscaping material over impacted soil or impacted sediment.

— New definition.

- Change “restricted properties” to “limited access properties.”
- Change “ sand and gravel pits” to “surface mines.”
- Add “planted vegetation” as a layering alternative.

“Sediment” means material that is excavated or dredged from the shoreline or bottom of surface water.

— Slight revision.

“Street waste” means solid or decanted materials collected from stormwater catch basins, detention/retention ponds, ditches, and similar storm water treatment and conveyance structures, and materials collected during street and parking lot sweeping.

— Detention/retention pond and ditch reference –still remove? Any data to show why its different than other stormwater structures.

— Removed second half that previous described what was NOT street waste.

- Still want to remove pond and ditch reference as the materials are mostly vegetation that goes to composters and is not managed along with other street wastes.

“Soil” means material overlying bedrock consisting of clay, silt, sand, gravel size particles, and soil biota, and may contain de minimus amounts of other materials but consists primarily of clay, silt, sand, gravel size particles, and soil biota by volume based on visual inspection.

— Added de minimus with attempt to define de minimus.

“Solid waste” or **“wastes”** means all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, impacted soil and impacted sediment, organic materials, contaminated soils and contaminated dredged material, and recyclable materials.

“Vegetative materials” means solid waste that is a biological substance of plant origin capable of microbial degradation. Examples include, but are not limited to, yard debris, wood waste, discarded fruit and vegetables, and fruit and vegetable food processing waste.

— New definition for helping exclude mfr topsoil.

- Do not support grass, fruit/vegetable, manure in the definition. Good topsoilers would not use these materials. Health agencies think this could lead to problems with odor, vectors, pathogens.

Sampling of Receiving Site – Prescriptive or Not

This if for the exclusion allowing impacted soil/sediment that exceeds table standards to be used at sites with equal or greater contamination.

- Do not be prescriptive in receiving site sampling.

Use of accredited lab

- Do not require use of accredited lab. Would limit use of other technologies, like XRF.
-

Approval/self-authorization process – recordkeeping, submittal

What kind of records or submissions for approval should be required?

- Self-authorization is the preference. Generators/receiving sites must test and use impacted soil/sediment in accordance with the section, keep records on the results, and possibly the final destination of the material. Health departments do not have the resources or desire to review or approve every project, but they do need to see verification that handling was done properly in case a problem/complaint arises.
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Rule Language (without definitions)

Applicability – 173-350-020

These standards do not apply to:

- *Clean soil and clean sediment as defined in WAC 173-350-100.*
- *Manufactured topsoil composed of clean soil or clean sediment and amended with solid wastes that are limited to vegetative materials and manure. Other materials may be included that are not solid waste, including rock or crushed rock, or products in commerce such as composted materials, registered fertilizers, and water retaining crystals.*

Land Application – 173-350-230

- *These standards do not apply to impacted soil and and impacted sediment when used in conformance with WAC 173-350-235.*

Piles Used for Storage or Treatment – 173-350-320 Applicability

- *These standards do not apply to impacted soil and impacted sediment when stored for up to one year in conformance with WAC 173-350-235.*

Surface Impoundments and Tanks – 173-350-330 Applicability

- *These standards do not apply to impacted soil and impacted sediment when stored for up to one year in conformance with WAC 173-350-235.*

WAC 173-350-235 Soil and Sediment Criteria and Use.

(1) Soil and Sediment Criteria and Use - Applicability.

This section is applicable to characterization and use of impacted soil and impacted sediment.

This section is not applicable to:

- (a) Storage or treatment of impacted soil or impacted sediment in piles which are subject to WAC 173-350-320;*
- (b) Storage or treatment of impacted soil or impacted sediment in containers which are subject to WAC 173-350-300;*
- (c) Use of impacted soil or impacted sediment that has a beneficial use permit exemption under WAC 173-350-200;*

(2) Soil and Sediment Criteria and Use - Location standards. *There are no specific location standards for use of impacted soil and impacted sediment subject; however, use of impacted soil and impacted sediment must meet the requirements in WAC 173-350-040(5).*

(3) Soil and Sediment Criteria and Use - Design standards. There are no specific design standards for use of impacted soil or impacted sediment; however, use of impacted soil or impacted sediment must meet the requirements in WAC 173-350-040(5).

(4) Soil and Sediment Criteria and Use - Operating standards. The owner of or operator handling impacted soil or impacted sediment shall:

(a) Meet the performance standards of WAC 173-350-040.

(b) Ensure soil and sediment are not diluted with other materials in order to meet criteria established under this section.

- One person suggested removal of (b) in that dilution is sometimes appropriate. The example given was with arsenic-contaminated soil, which has been allowed to be blended to reach limit. In that example, blending is for retaining on the sites of origin.

(c) Analyze impacted soil or impacted sediment for the following parameters:

(i) For impacted sediment, test for parameters as required by chapter 173-204 WAC, Sediment Management Standards.

(ii) For street waste, petroleum contaminated soil, manufactured topsoil, and soils with cementitious materials, analyze impacted soil for contaminants as specified in Appendix I.

(iii) For impacted soil other than street waste, petroleum-contaminated soil, manufactured topsoil, and soils with cementitious materials, analyze impacted soil for contaminants suspected or known to be present and as required by the jurisdictional health department.

(d) Collect samples in the following manner:

(i) For impacted sediment, in accordance with chapter 173-204 WAC, Sediment Management Standards.

(ii) For impacted soil:

(A) Take samples of soil in the condition it is in prior to removal from the site of origin, such as after treating for pH or for manufactured topsoil, after blending with all materials.

(B) In accordance with procedures that ensure each sample is representative of the impacted soil, such as composite sampling as described in EPA530-D-02-002, RCRA Waste Sampling Technical Guidance, or the 2002 U.S. Composting Council Test Methods for the Examination of Composting and Compost Method 02.01-A through E. ASTM Method XXX. PREFER BEING PRESCRIPTIVE OR REFERENCING OTHER STANDARDS? For example - Obtain each sample using a clean shovel by taking seven shovel-full volumes of the impacted soil from a variety of locations and depths. Mix the soil thoroughly on a tarp or similar device and gather one sample from this mixture in accordance with laboratory procedures.

- No need to be prescriptive. References to representative sampling is adequate.

(e) Collect samples at the following frequency:

(i) For impacted sediment, in accordance with chapter 173-204 WAC, Sediment Management Standards.

(ii) For impacted soil:

(A) For impacted soils originating from a site with a finite amount of impacted soil, collect the number of samples specified by Table 235-A and analyze each for the parameters in subsection (4)(b).

- Need to refine/clarify/change. All sites of generation are finite.

(B) For facilities accepting soil on an ongoing basis for later distribution that may contain impacted soil or other solid wastes, such as manufactured topsoil, collect a sample for each 5,000 cubic yards produced and analyze for the parameters in subsection (4)(b).

(C) Impacted soil and impacted sediment consistent in quality and continually produced do not have to regularly test in accordance with this subsection, but must analyze materials at least once per year in accordance with this section, and must obtain written approval from the jurisdictional health department prior to reducing testing frequency.

Table 235-A

Total Cubic Yards to be Removed from Project Site	Number of Samples
0-100	1
101-1,000	2
1,001-50,000	4
50,001-100,000	8
Over 100,000	8+1 for each additional 50,000 cy

- This requires more testing for smaller amounts. Consider revising.

(f) Use impacted soil or impacted sediment in the following manner:

(i) Impacted soil and impacted sediment meeting standards for unrestricted land use in WAC 173-350-XXX Appendix ? is clean soil and clean sediment and excluded from regulation under this chapter.

(ii) Impacted soil and impacted sediment meeting standards for restricted land use in WAC 173-350-XXX Appendix ? may be used at restricted properties as defined in this chapter.

(iii) Impacted soil and impacted sediment may be placed at sites containing contaminants at equal or greater concentrations. **NEED TO DISCUSS RECEIVING SITE CHARACTERIZATION.**

(iv) Impacted soil and impacted sediment may be used back at the site of generation.

(v) Impacted soil and impacted sediment containing contaminants that are useful for their engineering properties may be used for those properties in a project certified by an individual licensed to practice engineering in the state of Washington.

(vi) Street wastes that do not exceed the contaminant limits in Table 235-B may be used as follows:

- (A)
- (B)
- (C)

Table 235-B

Parameter	Limit (mg/kg)
Arsenic, Total	20.0
Cadmium, Total	2.0
Chromium, Total	42
Lead, Total	250
Mercury (Inorganic)	2

Nickel, Total	100
Zinc, Total	270 (570?)
TPH ² -Gasoline Range Organics	100
TPH ² -Diesel Range Organics	200 (2,000?)
TPH ² -Heavy Fuels and Oil	2,000
Polycyclic Aromatic Hydrocarbons, carcinogenic (cPAHs)	2.0
Other parameters suspected or known to be present in the soil	As specified for restricted land use in WAC 173-350-XXX, Appendix ?

- Need to distinguish chromium III vs VI.
- The limit for chromium of 42 is less than background on the west side. (Marni checked after the meeting and 42 is the background limit for the state, but Puget Sound specifically is 48, and all other places in the state tested between 18 and 38).

(v) Impacted soil and impacted sediment with contaminants above levels provided in WAC 173-350-XXX Appendix I, or that will not be used in ways allowed by this subsection, or that do not meet the standards of this section, must be disposed at a solid waste landfill permitted to accept such materials, be managed in other ways in accordance with this chapter, or as allowed on a case-by-case basis by the jurisdictional health department.

- Need to add another category to allow site-specific exceptions to the allowed uses above.
- Should comparisons to table limits be based on average test results? Average concentrations per job site? Need to clarify this.

(g) Store impacted soil or impacted sediment for up to one year at the site of origin or receiving site, and minimize and control runoff and run-on through use of covers, diversion swales, berms, ditches, or other features.

(h) If results of testing done in accordance with this section show that impacted soil or impacted sediment may be used as described in subsection WAC 173-350-235(f)(ii-vi), submit the following information to the jurisdictional health department:

- (i)*
- (ii)*
- (iii)*
- (iv)*
- (v)*
- (vi)*
- (vii)*

(5) Soil and Sediment Criteria and Use - Ground water monitoring requirements. There are no specific ground water monitoring requirements for impacted soil and impacted sediment subject to this chapter; however, owners or operators handling impacted soil and impacted sediment must meet the requirements of WAC 173-350-040(5).

(6) Soil and Sediment Criteria and Use - Closure requirements. There are no specific closure requirements for impacted soil and impacted sediment subject to this chapter; however, owners or operators handling impacted soil and impacted sediment must meet the requirements of WAC 173-350-040(5).

(7) Soil and Sediment Criteria and Use - Financial assurance requirements. There are no specific financial assurance requirements for impacted soil and impacted sediment subject to this chapter; however, owners or operators handling impacted soil and impacted sediment must meet the requirements of WAC 173-350-040(5).

(8) Soil and Sediment Criteria and Use - Permit application contents. The owner or operator handling impacted soil and impacted sediment in accordance with this section is not required to obtain a solid waste permit from the jurisdictional health department.

(9) Soil and Sediment Criteria and Use - Construction records. There are no specific construction record requirements for impacted soil and impacted sediment subject to this chapter; however, owners or operators handling impacted soil and impacted sediment must meet the requirements of WAC 173-350-040(5).

WAC 173-350-XXX
 Appendices.

Appendix I

Parameters Only parameters marked with "X" are required to be tested for each soil type.		Petroleum Contaminated Soil¹	Manufactured Topsoil	Soils with Cementitious Materials
Arsenic, Total			X	X
Barium, Total			X	X
Cadmium, Total			X	X
Chromium, Total			X	X
Copper, Total			X	
Lead, Total		X	X	X
Mercury (Inorganic)			X	X
Nickel, Total				
Selenium, Total			X	X
Silver, Total			X	X
Zinc, Total				
TPH ² -Gasoline Range Organics		X	?	
TPH ² -Diesel Range Organics		X	?	
TPH ² -Heavy Fuels and Oil		X	?	

<i>TPH²-Mineral Oil</i>		X	?	
<i>Benzene</i>		X		
<i>Ethyl benzene</i>		X		
<i>Toluene</i>		X		
<i>Xylenes</i>		X		
<i>Methyl Tert-Butyl Ether (MTBE)</i>		X		
<i>Polychlorinated Biphenyls (PCBs)</i>		X		
<i>Napthalenes</i>		X		
<i>Polycyclic Aromatic Hydrocarbons, carcinogenic (cPAHs)</i>		X		
<i>pH</i>				X
<i>Odors</i>		X		
<i>Staining</i>		X		
<i>Sheen Test</i>		X		
<i>Other parameters suspected or known to be present in the soil</i>		X	X	X
<i>Other parameters suspected or known to be in materials/products added to soil</i>				X

¹For TPH, if product release is unknown, test for gasoline range organics. If soil is contaminated from mixture of more than one product, test for both. Use category most closely represent the TPH mixture.

²Total Petroleum Hydrocarbon

LOTS MORE NOTES NEEDED HERE TO BE COMPLETE.

Close

- Next meeting will be face-to-face in Olympia on October 29. Marni hopes to have a complete rule draft, including contaminant limits, for that meeting.