

# Willamette Basin Mercury TMDL

## Advisory Committee Meeting Minutes

Wednesday, March 21, 2018, 10 a.m. to 3 p.m.

Linn County Extension

33630 McFarland Road, Tangent, OR

Objective: This meeting features speakers who will give presentations on implementation of the 2006 Willamette Basin Mercury TMDL for different land uses and permitted discharges. The objective of this meeting is to inform advisory committee members of the current practices already underway to reduce mercury.

**9:45** Gather and Settle

**10:00** Introductions and Summary of Key Issues from the Feb. 21 Meeting  
*Andrea Matzke, DEQ*

DEQ thanked Linn County Extension for allowing us use of their conference room and did a round of introductions in the room as well as several participants on the conference line. DEQ also reviewed several outstanding items from the last meeting:

- Please review last meeting's minutes and send any comments to Paula by this Friday.
- DOGAMI has passed on mercury mine information to DEQ and DEQ has forwarded on to Tetra Tech.
- MS4 and point source data request: DEQ assessing what we have internally, before making a request to permit holders.
- Clean Water Service's request for point source data that Tetra Tech will use in the modeling: DEQ will make all data public once the modeling is complete. DEQ prefers to publicly post all data at once, rather than pieces at a time. DEQ will be able to add point source data or other needed data to the modeling if Tetra Tech is unable to accomplish this under their existing contract.
- DEQ is working on developing a map of mercury listings for the Willamette Basin to post to the Mercury TMDL website. In the interim, please reference a suitable map in Jon Butcher's February 15 presentation, which is posted on the Advisory Committee website.

**10:15** Overview of the 2006 Willamette Basin TMDL Water Quality Management Plan  
*Paula Calvert, DEQ*

**10:25** Bureau of Land Management - Management of Federal Forest Lands  
*Mike Brown and Steve Wegner, BLM*

- BLM is primarily working to manage sediment discharging to aquatic habitats. BLM is also continuing to disconnecting road networks from streams.



State of Oregon  
Department of  
Environmental  
Quality

### TMDL Program

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*DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.*

- Approximately 200 best management practices (BMPs) are currently being assessed. BMP analysis helps to identify which BMPs should be discontinued based on poor performance or implementation.
- Response to questions:
  - BLM may require the operator or purchaser of a timber harvest to conduct remediation activities based on timber sale analysis.
  - Most of BLM's Northwest Oregon District is in the Willamette Basin.
  - BLM uses native species, but also uses non-native grasses for rapid establishment of vegetative cover for erosion control, for example, on disturbed roadsides. BLM no longer conducts clear-cutting.
  - BLM's Resource Management Plans (RMPs) do not specifically implement the TMDL although the RMPs reference the TMDL. BLM uses their TMDL implementation plan, the Water Quality Restoration Plan, for implementation guidance.

**10:45**

#### Willamette National Forest BMP Implementation Program

*Johan Hogervorst, U.S. Forest Service*

- USFS established a national BMP database in 2012, which identifies specific, core BMPs and design criteria for project sites.
- Monitoring protocols are in place for all 10 resource areas, such as wildland areas, recreational areas, and roads. At least seven protocols are assessed each year nationwide. For example, USFS now uses a 2:1 slope for bank stabilization instead of the steeper 1:1 slope design.
- Response to questions:
  - Many BMPs revolve around where USFS puts pumps in streams to protect fish. Passive revegetation is now employed to a greater extent. Soils in USFS managed areas are often highly porous, and erosion is not typically a problem, so USFS has reduced re-seeding by helicopter and treatment of hillsides.

**11:05**

#### Forest Practices Act and Water Quality Protection

*Adam Coble, Oregon Department of Forestry*

- ODF has specific standards for road building, working in areas at risk for landslides, and water quality protection rules specific to working in riparian areas and streams.
- ODF conducted a Forest Practices Act Compliance Audit, which included 300 sites from 2013-2016. This study considered compliance with FPA standards and resource impacts from road construction and maintenance and harvest operations. The compliance rate is about 96-97% depending on sample year.
- While filtered mercury concentrations may go up as a result of harvest operations, the amount is still relatively low, for example, a Trask River paired watershed study indicates < 1ng/L (Arismendi et al., 2016).
- Response to questions:
  - Compliance measures are reported annually to Oregon's legislature. The goal is 100% compliance.

**11:25**

Oregon Department of Agriculture – Agricultural Water Quality Program  
*Michael Powers, ODA*

- ODA implements the TMDL through enforcement of ODA rules and engaging stakeholders through voluntary measures identified in Ag Area Water Quality Management Plans. Each of the 38 ag areas has an associated plan.
- The primary goal is for ag to provide specific functions, for example, site capable vegetation to reduce pollutant loading to streams.
- Response to questions:
  - A vast majority of farms are small and family owned, but Oregon's \$1 billion ag market primarily consists of large production farms.
  - Each of the 38 ag areas have a Local Advisory Committee that meets at least once every two years to go over water quality data and implementation status.
  - The Willamette Basin WQMP provides the link between TMDL load allocations and TMDL implementation for nonpoint sources like agriculture. Current BMP and water quality monitoring efforts are not able to connect specific on-the-ground actions to water quality monitoring data.
  - Bi-annual review of WQ rules, and implementation of rules, provides opportunity for assessing implementation progress. During this process, DEQ provides ODA with Status and Trends reports, which identify trends in water quality in a given ag area, but trends cannot be connected to a specific source.

**11:45**

Lunch Break

**1:00**

Abandoned Mine Lands and Mercury in the Willamette Basin  
*Bryn Thoms, DEQ*

- Prior to 1972, mines were abandoned by owners or operators when operations were terminated, so there is a legacy of historical mine sites that contribute to acid mine drainage. While relatively uncommon in Oregon, there are about 20 significant sites in Oregon in regard to AMD. This is out of a total of 200 known historical mine sites.
- DEQ's Cleanup Program has a process in place to work with owners to clean-up mine sites.
- Black Butte Mine in the Coast Fork Willamette watershed is a mercury mine, and is a known source of mercury in the Willamette Basin.
- Comments from DOGAMI:
  - DOGAMI offered to check their MILO database for data on mercury in geochemistry of groundwater.
  - Western Cascades are underexplored and there is likely to be many small ore deposits, such as thermal gold deposits that are unidentified that might show up in seeps and springs.

**1:20**

## Portland District Water Management, Willamette Basin Oregon; Cottage Grove and Dorena Dams

*Holly Bellringer and Norman Buccola, U.S. Army Corps of Engineers*

- Ten of the 13 Willamette Valley Project dams are “high head” dams. Two are operated for peak power and the rest are regulated for flow and other authorized purposes, which are secondary to flood risk management. The major flood season occurs between November-February.
- The Willamette Valley Project dams control about 27% of the area’s runoff.
- USACE is working on addressing downstream fish passage on high head dams in response to a 2008 Biological Opinion issued by NOAA for steelhead and Chinook Salmon
- Response to questions:
  - Fish passage work is not planned nor is it a priority for Cottage Grove or Dorena lakes, which largely support hatchery fish. Mosby Creek is the only stream in the sub-watershed that could support salmon.
  - Hydrodams, like Dorena, typically have lower ports compared to non-hydrodams like Cottage Grove.
  - Spillways are used for temperature management. Warm water is released in the summer so there is cooler water available in the fall when fish are spawning.
  - Reservoirs are not actively managed for sediment, but sediment surveys are conducted every five years. Cottage Grove will be surveyed in 2018. Fall Creek reservoir is drawn down for fish passage, which results in sediment release. While spillways can be designed to release sediment, this is typically not an issue with high head dams.

**1:40**

## History of Mercury Implementation for Point Sources in the Willamette Basin

*Spencer Bohaboy, DEQ*

- There are no mercury based effluent limits from the 2006 TMDL. A 2010 DEQ memo describes what is expected of permittees when permits are renewed. Due to a backlog of permit renewals, a number of permits are administratively extended and have not yet been revised to incorporate the elements presented in the 2010 memo. For those permits that have been renewed, Mercury Minimization Plans have been completed and approved by DEQ.
- EPA’s 2010 guidance connected fish tissue methylmercury to effluent. If a facility gets a detection for total mercury, then methylmercury is presumed present.
- The highest tech wastewater treatment plant in Oregon can get down to 2 ng/L, but the water column criterion is only 0.012 ug/L.
- Response to questions:
  - DEQ has not yet decided if intake credits can be used to measure NPS success. Intake credits were not used in the 2006 TMDL. DMAs are not responsible for activities that occur outside of their jurisdictions.

**1:55**

## NPDES MS4 Permittees and the Willamette River Mercury TMDL

*Krista Reininga, Brown and Caldwell*

- Currently, there are eight Phase I and 18 Phase II permitted MS4s. Note that these systems represent a conveyance, not a source, of pollutants.
- There are no effluent limits. The “standard” treatment expectation is the Maximum Extent Practicable (MEP).
- Response to questions:
  - MS4s rely on the TMDL to identify pollutant sources. There is not a specific study that characterized where mercury is coming from, but sampling indicates a high degree of variability even within one sampling site.
  - It has been suggested that constructed wetlands could be a source of methylmercury. However, sampling at Gresham’s two large wetland treatment facilities have not shown evidence of methylmercury leaving the wetland facilities.
  - DEQ’s 2013 TMDL Five Year Report summarizes the structural and non-structural controls that are in place to address pollutant loading.

**2:20**

## Mercury Minimization &amp; Monitoring at Municipal Treatment Facilities

*Raj Kapur, Clean Water Services*

- Wastewater treatment plants are designed to remove solids, bacteria and oxygen demanding pollutants.
- EPA has a national standard for secondary treatment, yet all of Oregon’s major municipal wastewater treatment facilities in the Willamette Basin provide at least advanced secondary or tertiary treatment.
- Municipal wastewater treatment plants are very effective at removing mercury; however, mercury removal is incidental to the treatment processes that are employed to remove solids.
- Mercury levels in discharges from municipal wastewater treatment facilities are in the 2-3 ng/L range similar to background levels found in the Willamette Basin.
- Studies by EPA and others of mercury sources in municipal wastewater suggest that 50% of mercury is from dental offices, and 15-20% is from residential sources. State and federal action has been taken to require the installation of amalgam separators and maintain the separators to reduce the primary source of mercury into municipal wastewater systems.
- Most of the other mercury sources in municipal wastewater are diffuse; actions taken by municipalities are geared towards reducing mercury in the environment; there is not a wastewater nexus for many of these mercury reduction activities.
- A literature review did not identify technologies that would be able to reduce mercury levels to the target levels based on the fish consumption criterion.
- A variance will be needed for Oregon’s municipal treatment facilities, as there are no viable options available to further reduce mercury concentrations at this time.

- Response to questions:
  - The treatment system uses biological activity to treat mercury in particulate form. Mercury is removed as solids and separated from the waste stream. Mercury in biosolids averages about 0.5 mg/kg and is well below EPA's criterion for land application, which is 17 mg/kg.
  - Controls are in place to make sure mercury does not run off from land applied biosolids. There are set back and slope requirements. Land applied biosolids will not be located where there are sensitive resources, such as streams. In certain areas biosolids are tilled although this might not be a uniform practice.
  - The permitting process for land applying biosolids is initiated under the NDPDES permit and administered through a land application program.

**2:40**

#### Modeling Update

*Kevin Brannan, DEQ*

- Response to questions:
  - DEQ has not yet decided how to address shuttered or inactive permitted sites.
  - Exempt MS4s are included in specific land use categories of the load allocation.
  - The modeling approach for this TMDL does not require field-scale cropping information when modeling agricultural pollutant loading, for example, DEQ does not need to know the specific crop rotations for each field in the basin. The main differentiation for agricultural land, using this modeling approach, is between perennial versus annual cropping systems. The landscape data largely comes from National Land Cover Dataset (NLCD), which is a limitation of the model.
  - DEQ will be meeting individually with DMAs, such as ODA and ODF, to discuss implementation of the TMDL.

**2:50**

#### Wrap-up and Next Steps

*Andrea Matzke, DEQ*

- DEQ thanked all the presenters for taking the time to share some of the actions DMAs are doing to reduce mercury.
- DEQ announced that there is no advisory committee meeting on April 11. DEQ will be getting all the modeling results back from Tetra Tech, so we will be spending time reviewing those results and will not have anything to share by the April meeting. The next meeting will be June 13 (location TBD).
- We will focus on individual DMA discussions in July and August, as well as look at priority areas for restoration. We will bring those conversations back to the advisory committee.

- DEQ will also begin developing an FAQ, which would likely include both technical and policy types of questions. The FAQ should help provide clarity around the technical aspects of the modeling.
- Be on the lookout for draft meeting minutes in the next few weeks.

**3:00**

Adjourn

### **Alternative formats**

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