

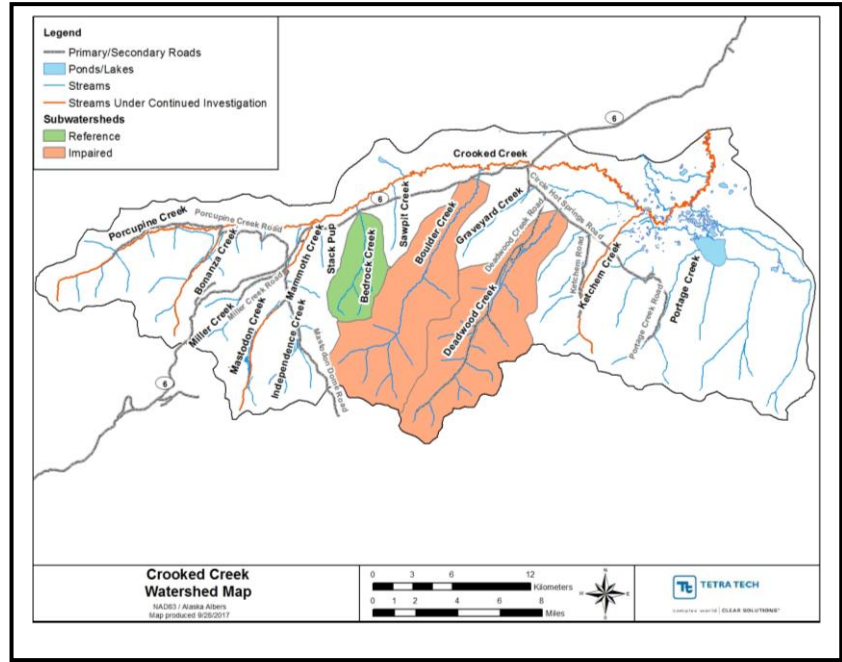


**Boulder and Deadwood Creek Turbidity
Draft Total Maximum Daily Load (TMDL) Factsheet
Fairbanks, Alaska**

1. What is the problem with Boulder and Deadwood Creek water quality?

Boulder and Deadwood Creeks are polluted from turbidity. Turbidity comes from excess sediment which makes the water look cloudy. Sources include active placer mining and sediment erosion from historically disturbed sites.

Boulder and Deadwood Creeks are part of the larger Crooked Creek watershed (approximately 319 mi²). This area, near Central, Alaska, has been a major gold mining area for over 100 years and contains highly mineralized terrain.



2. How do we know Boulder and Deadwood Creeks are polluted?

Alaska’s Department of Environmental Conservation (ADEC) first put the Crooked Creek watershed, including Deadwood Creek, on the Clean Water Act (CWA) Section 303(d) list as polluted for turbidity in 1992. Additional studies by ADEC in 2014 and 2016 indicate that Deadwood Creek continues to be polluted. Boulder Creek (not included in the 1992 listing) is also polluted and it does not meet Alaska’s water quality criteria for turbidity.

3. What’s turbidity, where does it come from and why should I care?

Turbidity is a measure of water clarity in streams, rivers, lakes, and the ocean. Turbidity describes the amount of light scattered or blocked by suspended particles in a water sample. Clear water has low turbidity and cloudy or murky water has a higher turbidity level. Turbidity is caused by particles of soil, organic matter, metals, or similar matter suspended in the water column.

Potential sources of turbidity in Boulder and Deadwood creeks include permitted point sources (such as wastewater discharges from active placer mines) and nonpoint sources (such as runoff from historically disturbed placer mine sites).

Increased levels of turbidity impact drinking water sources and make treatment more difficult; diminish fish rearing success with negative impacts to fisheries; and impair recreational uses by making waterbodies less appealing. Land use activities can cause loss of riparian vegetation and soils, elimination of stream banks, and loss

of natural habitat. The presence of turbidity indicates effects from excess erosion and sediment inputs on watershed health.

4. How will the water quality be improved?

Reducing turbidity Boulder and Deadwood Creeks will involve controlling runoff from currently active and historic mine sites. Best management practices must be implemented to prevent sediment from reaching the creek. These include methods to manage runoff and site water, such as silt fences, berms, sediment ponds, and mulching or planting vegetation to retain soil cover (see example photos below).



Examples of best management practices. Silt fence (left), elongated sediment ponds (right)

5. What is a Total Maximum Daily Load (TMDL)?

The TMDL is basically a “pollutant budget”. This budget is an important component of the overall recovery plan. The budget calculates the maximum amount of sediment that can enter Boulder and Deadwood Creeks while still meeting the state’s allowed limit for turbidity. A TMDL is established to meet the requirements of Section 303(d)(1)(C) of the Clean Water Act.

The TMDL budget was developed using standard mathematical equations, actual creek water quality data, and other landscape and weather measurements. The calculations show the pollutant reductions in sediment inputs needed to allow the creek meet the state’s allowed turbidity limit. The reductions are expressed as monthly Total Suspended Solids (TSS) targets and turbidity threshold values (NTU). The draft TMDL explains these calculations in detail. A summary of the TMDL targets and turbidity threshold values are shown in the table below:

Parameter (units)	Storm-related	Last week of May	June	July	August	September
Turbidity (NTU)	58.6	5.4	5.4	6.8	6.9	6.2
TSS (mg/L)	114.3	7.1	7.1	8.9	8.9	8.1

***What are three important “fixes” for cleaning up
Boulder and Deadwood Creeks?***

- ✓ Implement best management practices on actively disturbed areas to prevent erosion and runoff.
- ✓ Follow permit guidance and monitor water quality.
- ✓ Keep the naturally vegetated corridor along the creek to filter pollutants.

6. How can I learn more about this draft TMDL recovery plan or make comments?

The draft TMDL is available at: <http://dec.alaska.gov/water/water-quality> or by request from the contact below.

DEC is asking for public review and comments at this time. **Written public comments must be mailed, faxed, emailed, or hand delivered to the address below before 5:00 PM on May 9, 2018.**

In addition, ADEC will hold a public information meeting to discuss the draft TMDL during the public comment period. The meeting is scheduled for 4-6pm on Wednesday April 25 at the Fairbanks office location below.

Answers to commonly asked questions about TMDLs in general can be found on the DEC website at: http://dec.alaska.gov/water/tmdl/pdfs/Commonly_asked_questions_about_TMDLs_Final.pdf

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