



Spokane River Cadmium, Lead and Zinc TMDL

Purpose and Objectives

Spokane River Metals TMDL WAG meeting

By: Robert Steed,

IDEQ , Surface Water Ecologist

April 5, 2016

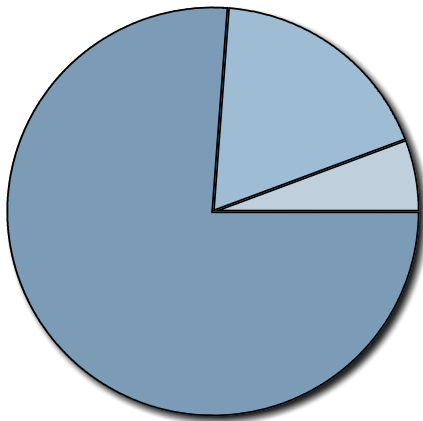


Spokane River Metals TMDL Watershed Advisory Group Meeting

- Idaho DEQ Coeur d'Alene Regional Office
- 4/5/2016
- 1:00 PM to 3:55 PM
- Osprey Conference Room
- 2110 Ironwood Parkway
- Coeur d'Alene ID 83814
- <http://www.deq.idaho.gov/regional-offices-issues/coeur-dalene/basin-watershed-advisory-groups/spokane-river-wag/>

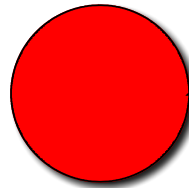


What is a TMDL (Total Maximum Daily Load)



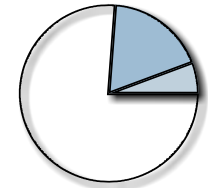
Existing Load

Upstream Sources
Point Sources
Non-point Sources



Target Load

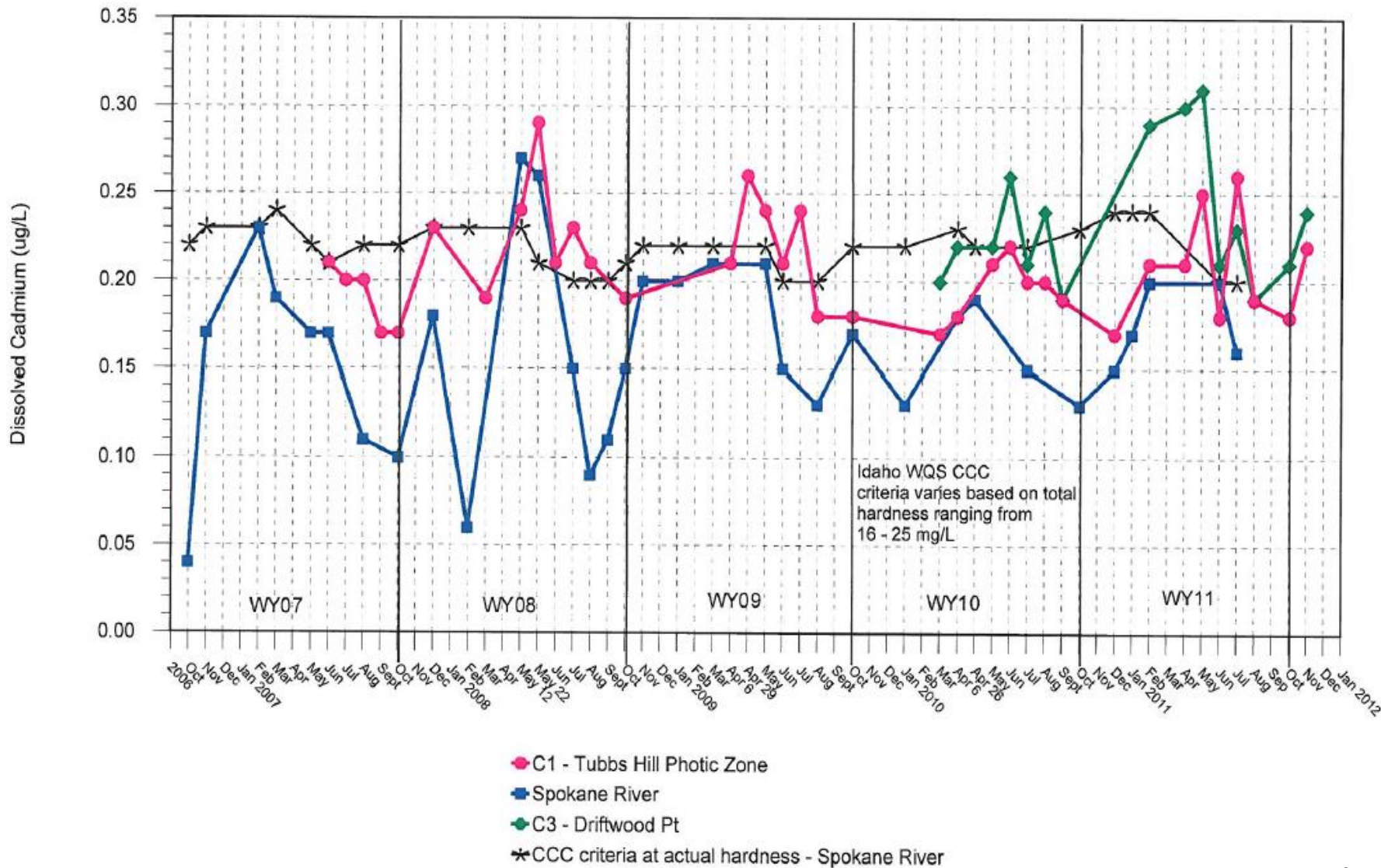
Idaho Water Quality Standards
Numeric Criteria



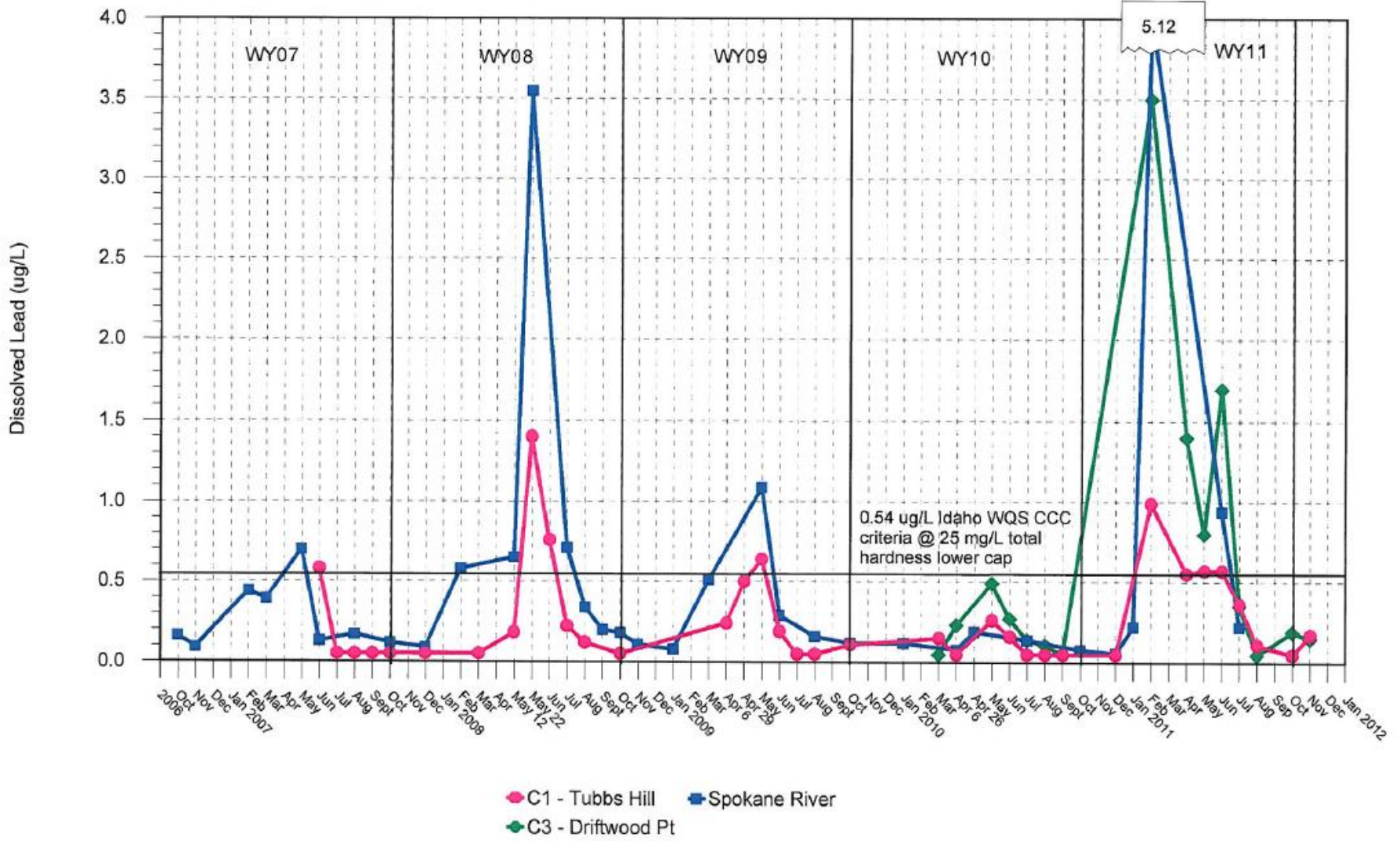
Load Allocations

Point Sources
Non-point Sources

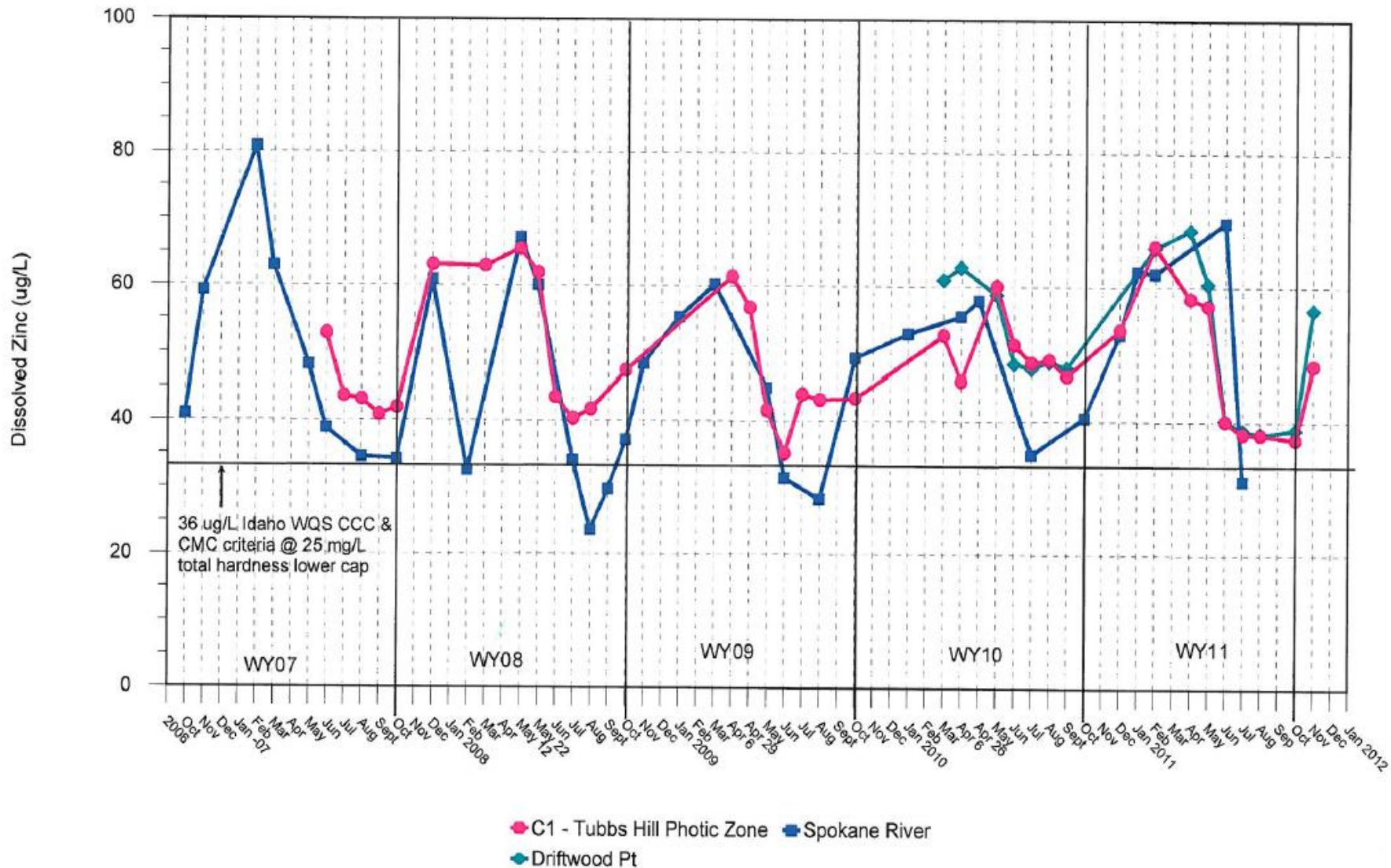
Dissolved Cadmium
USGS BEMP Monitoring @ Spokane River Lake Outlet &
DEQ Photic Zone @: C1 - Tubbs Hill & C3 - Driftwood Point
October 2006 - November 2011



Dissolved Lead
USGS BEMP Monitoring @ Spokane River Lake Outlet &
DEQ Photic Zone @: C1 - Tubbs Hill & C3 - Driftwood Pt
October 2006 - November 2011



Dissolved Zinc
USGS BEMP Monitoring @ Spokane River Lake Outlet &
DEQ Photic Zone @: C1 - Tubbs Hill & C3 - Driftwood Point
October 2006 - November 2011



Idaho Spokane River 303(d) Listing

- **1994 303(d) List**
 - MTU (Metals (unknown))
- **2010 Integrated Report**
 - **Cadmium, Lead, Zinc, Phosphorus (Total)**
 - ID17010305PN003_04 Spokane River - Post Falls Dam to Idaho/Washington border
 - ID17010305PN004_04 Spokane River - Coeur d'Alene Lake to Post Falls Dam
- **2012 Integrated Report (no change from 2010)**
- **Proposed 2014 Integrated Report (no change)**



TMDL Challenges

- In 2000, the Total Maximum Daily Load for dissolved metals in Surface Waters of the Coeur d'Alene Basin was approved by the EPA
- In 2000, however, a petition was filed for judicial review and for declaratory judgment claiming the TMDL was invalid for failure to comply with the formal rulemaking requirements under the Idaho Administrative Procedures Act procedure for rulemaking

More TMDL Challenges

- **The district judge ruled the TMDL was invalid for failure to comply with statutory guidelines**
- **According to Idaho Code §39-3611, DEQ must follow rulemaking provisions for any TMDLs for metals in the Coeur d'Alene River Basin, upstream from the headwaters of the Spokane River**



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hillon • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor
Curt Fransen, Director

May 21, 2013

The Honorable Eric Anderson
Idaho State Legislature
33 Match Bay Road
Priest Lake, ID 83856-5049

The Honorable George Eskridge
Idaho State Legislature
P.O. Box 112
Dover, ID 83825

Dear Representatives Eskridge and Anderson:

I am sorry I was unavailable for the meeting regarding the proposed lead, cadmium and zinc effluent limits contained in the draft Clean Water Act (CWA) permits for Coeur d'Alene, Post Falls and the Hayden Area Regional Sewer Board. I have had an opportunity to discuss with my staff the concerns and issues that you and the cities raised during the meeting, and would like to convey to you the manner in which DEQ intends to respond to those concerns and issues.

One of the concerns raised during the meeting was that DEQ's proposed certification of the Spokane River permits would prevent the cities from increasing the total amount (or mass) of metals discharged from their wastewater treatment facilities. According to the cities, this restriction would make it difficult to accommodate growth in their communities. Moreover, the cities assert this restriction would have no environmental benefit.

By way of background, the section 055.04 is intended to ensure high priority for the development of a TMDL can be developed. The effluent meet the applicable cadmium and zinc are expressed total "load" of causative pollutants restricts the total amount, not

After consultation with my staff, I believe section 055.04 is intended to ensure high priority for the development of a TMDL can be developed. The effluent meet the applicable cadmium and zinc are expressed total "load" of causative pollutants restricts the total amount, not

After consultation with my staff, and taking into consideration the additional information presented at the meeting, I believe section 055.04 must be applied in a manner that achieves its intended purpose of maintaining water quality to support designated and existing uses, in this case, specifically aquatic life uses. It also appears clear to me that an increase in the total amount or mass of metals discharged is not critical to ensuring protection of aquatic life in the Spokane River; instead, aquatic life is impacted by the concentration of metals in the river. In turn this means that water quality related to metals in this impaired stretch will be maintained, as required under the section 055.04 of the WQS, by ensuring that the concentration, rather than the mass, of metals is limited. DEQ intends to adjust the proposed

The Honorable Eric Anderson and George Eskridge
May 21, 2013
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certifications to allow an increase in the metals discharged as the communities plan for growth as long as the effluent concentration meets the criteria applicable to these metals.

You also raised a concern about whether section 055.04 imposes restrictions that go beyond those required by the Clean Water Act. This section of the Idaho rules was adopted in 1997. The CWA requires that states include an antidegradation policy and implementation provisions in their WQS. As you may remember, in 2011, DEQ went through an extensive negotiated rulemaking effort and adopted the required antidegradation provisions in the WQS. Among other things, the provisions adopted in 2011 include measures to ensure that the water quality necessary to protect existing uses of all waters in the state, including impaired waters like the Spokane River, is maintained and protected. Now that the antidegradation provisions are in place, I believe it is appropriate to amend section 055.04 of the WQS. Therefore, DEQ intends to initiate rulemaking to remove the provisions in this section that require that the total load of pollutants remain constant or decrease in the watershed until a TMDL is developed.

I hope this letter helps to address the questions and concerns you raised during the recent meeting. If you have further questions or concerns regarding the Spokane River permits, or have questions or concerns about any other DEQ matter, please do not hesitate to contact me.

Sincerely,

Curt A. Fransen
Director

Idaho Statute 39-3611

39-3611. DEVELOPMENT AND IMPLEMENTATION OF TOTAL MAXIMUM DAILY LOAD OR EQUIVALENT PROCESSES. (1) For water bodies described in section [39-3609](#), Idaho Code, the director shall, in accordance with the priorities set forth in section [39-3610](#), Idaho Code, and in accordance with sections [39-3614](#) through [39-3616](#), Idaho Code, and as required by the federal clean water act, prepare a subbasin assessment and develop a total maximum daily load to allocate pollutant loads to point source and nonpoint sources that discharge pollutants to the water body.

(3) For water bodies where an applicable water quality standard has not been attained due to impacts that occurred prior to 1972, no further restrictions under a total maximum daily load process shall be placed on a point source discharge unless the point source contribution of a pollutant exceeds twenty-five percent (25%) of the total load for that pollutant. Existing uses shall be maintained on all such water bodies.

(5) Point source discharges for which a national pollutant discharge elimination system permit is approved after January 1, 1995, shall be deemed to have met the requirements of this section.



SURFACE WATER
OUTFLOW
KEEP OUT

Existing Data (< 5yrs old)

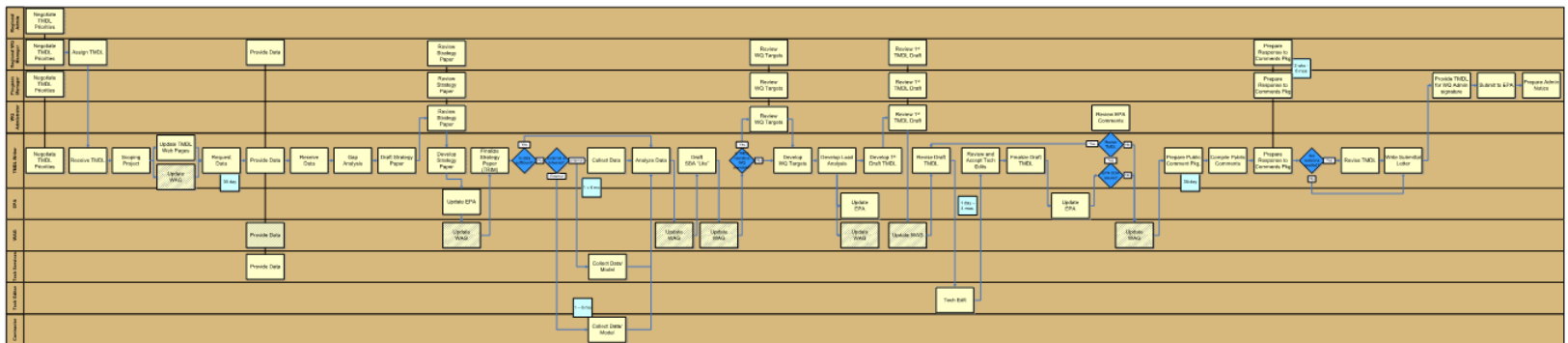
- **Idaho DEQ and Coeur d' Alene Tribe (upstream)**
 - Coeur d' Alene Lake Management Plan
- **USGS (upstream)**
 - Coeur d' Alene Basin Environmental Monitoring Program (BEMP)
- **WA Dept. of Ecology (downstream)**
 - Water Quality Monitoring State Network
- **Stormwater and WWTP data**

Kaizen:

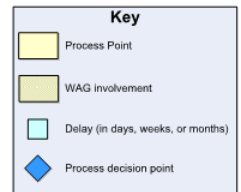
Total Maximum Daily Load (TMDL) Kaizen

January 9–12, 2012

Future TMDL Process



State of Idaho
Department of Environmental Quality
Boise, Idaho



Suggest Analysis Approach

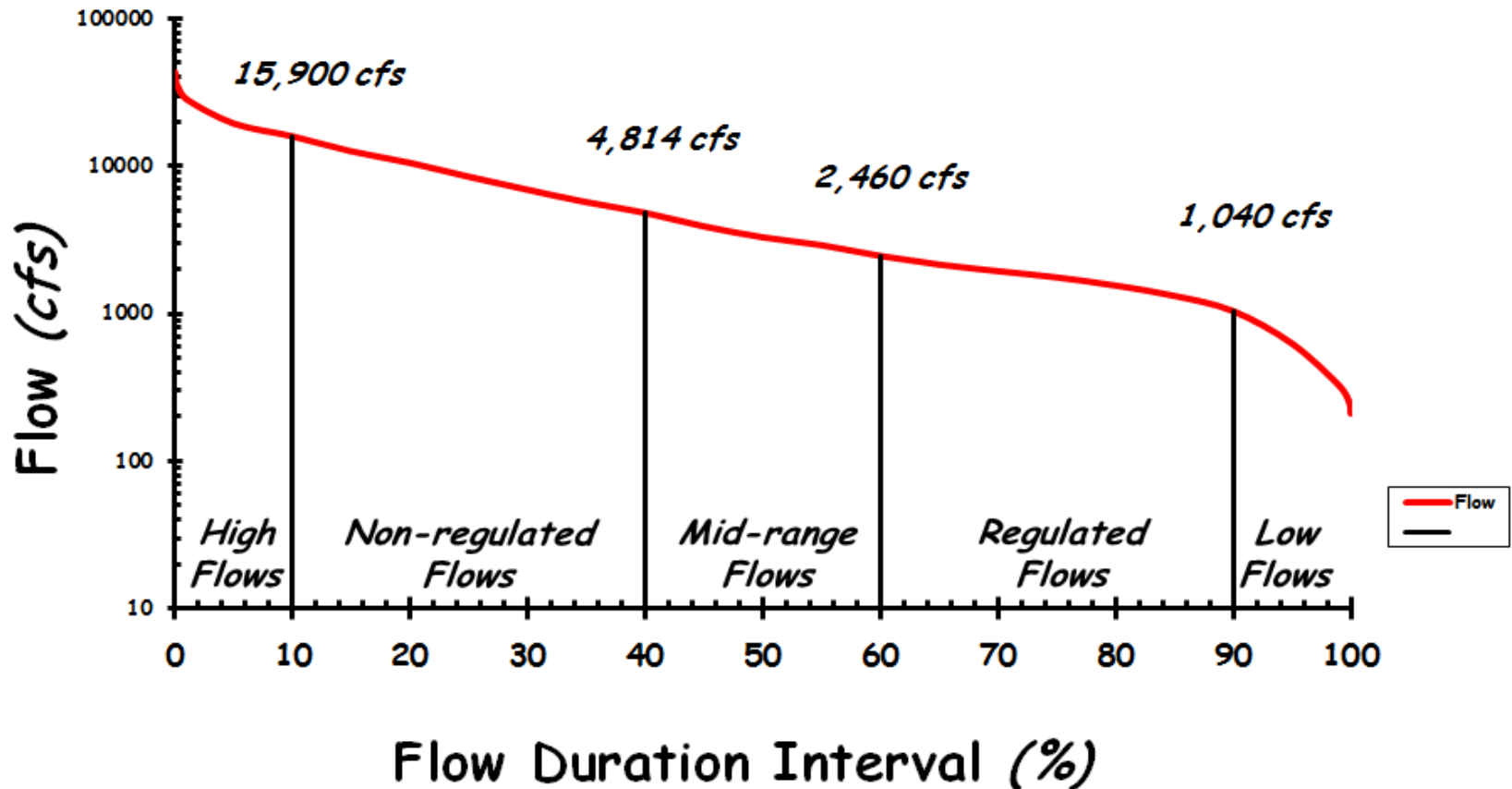
- **Load Duration Curve Process**
 - Modified to match hydrograph
 - 4 day averages for Chronic Criteria
 - All data compared to Acute Criteria



Spokane River near Post Falls, ID

Flow Duration Curve

USGS Gage: 12419000

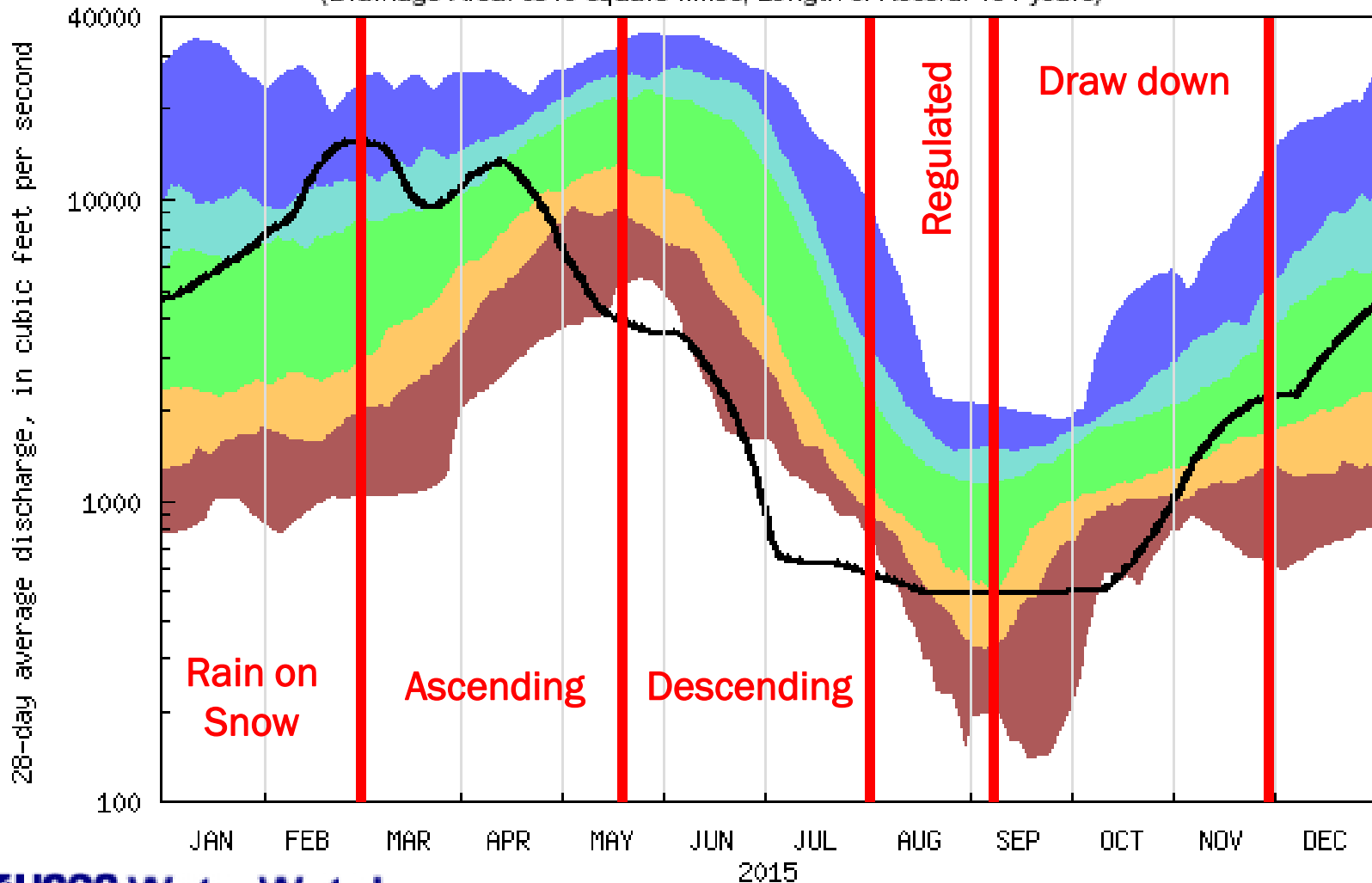


USGS Flow Data 1978-2012

3,830 square miles

Suggested flow duration breaks

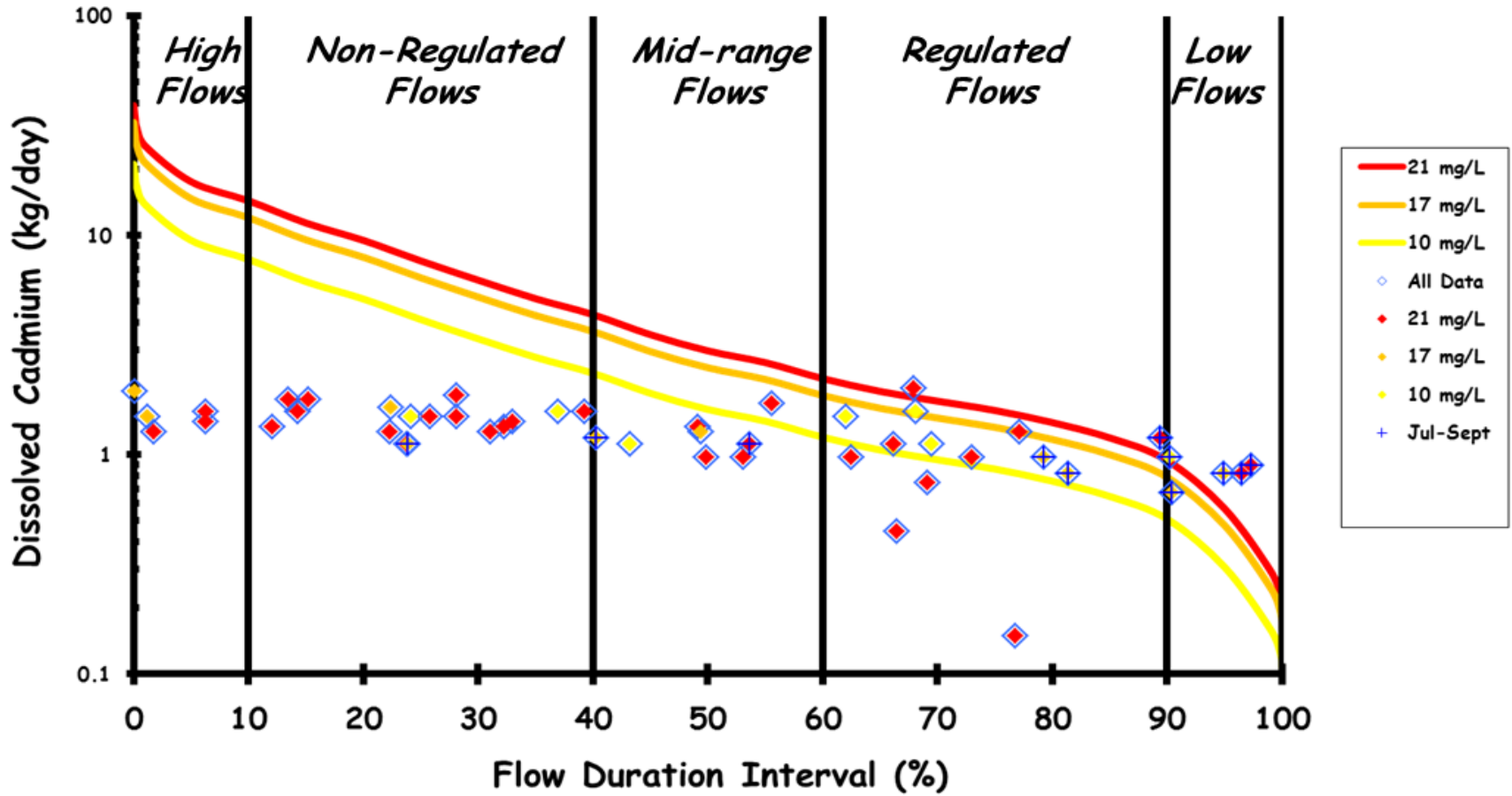
USGS 12419000 SPOKANE RIVER NR POST FALLS ID
(Drainage Area: 3840 square miles, Length of Record: 101 years)



Spokane River at CDA River outlet, ID

Load Duration Curve

Cadmium Acute CMC criteria, stn:12419000



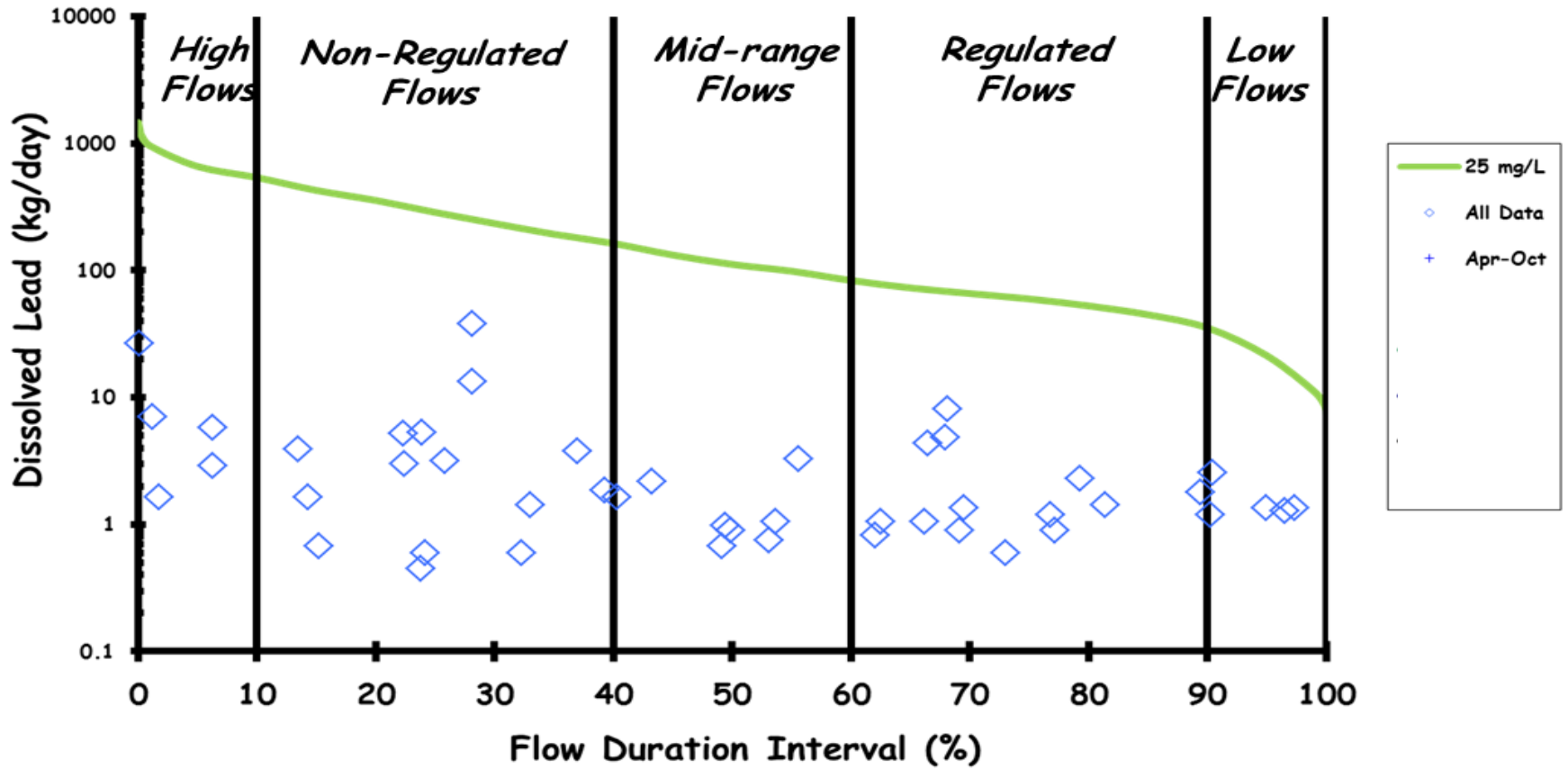
USGS Data & Gage 12419000 Duration Interval

BEMP data '04-'11

Spokane River at CDA River outlets, ID

Load Duration Curve

Lead Acute CMC Criteria, stn:12419000



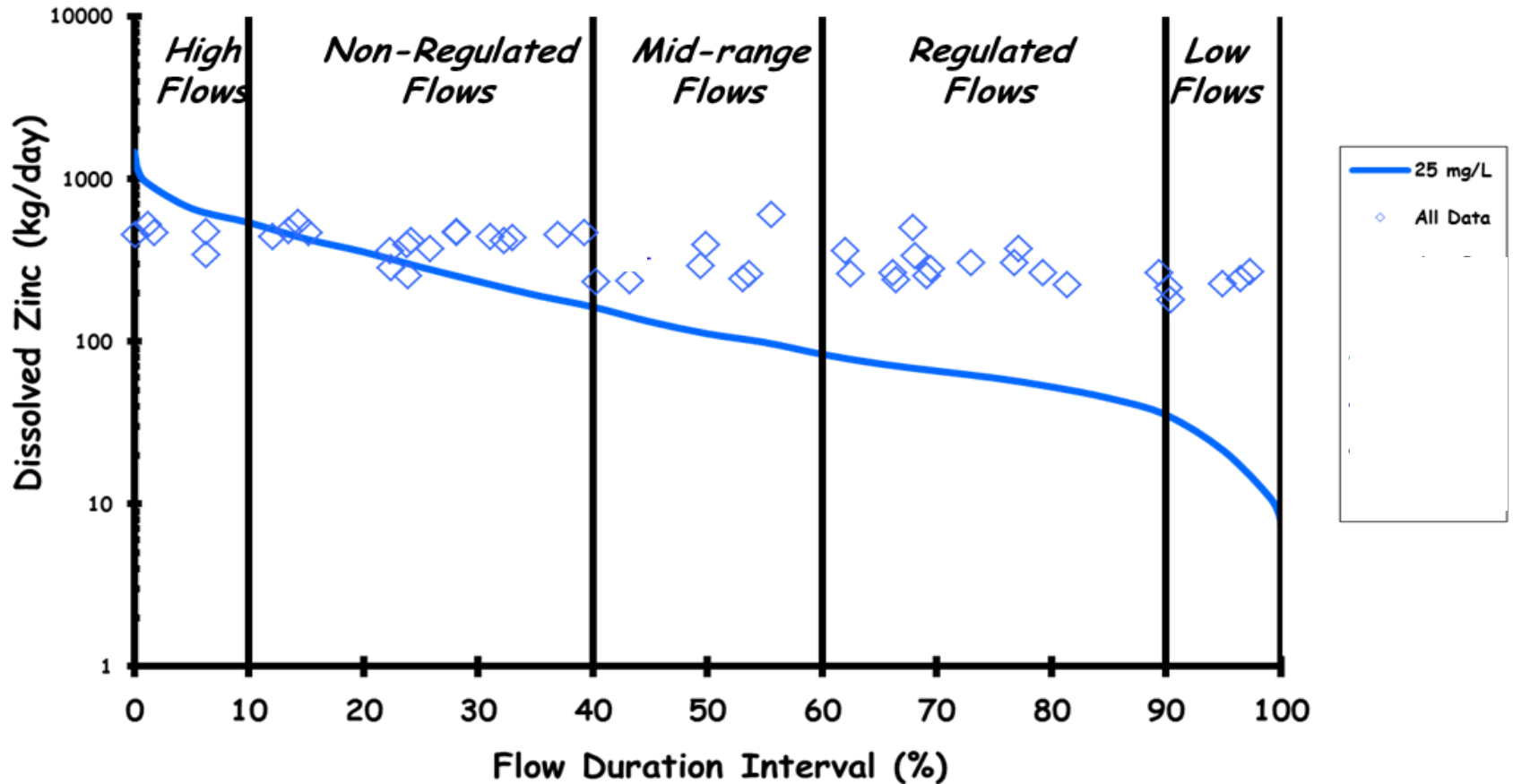
USGS Data & Gage 12419000 Duration Interval

BEMP data '04-'11

Spokane River at CDA River outlet, ID

Load Duration Curve

Zinc Acute CMC Criteria, stn:12419000



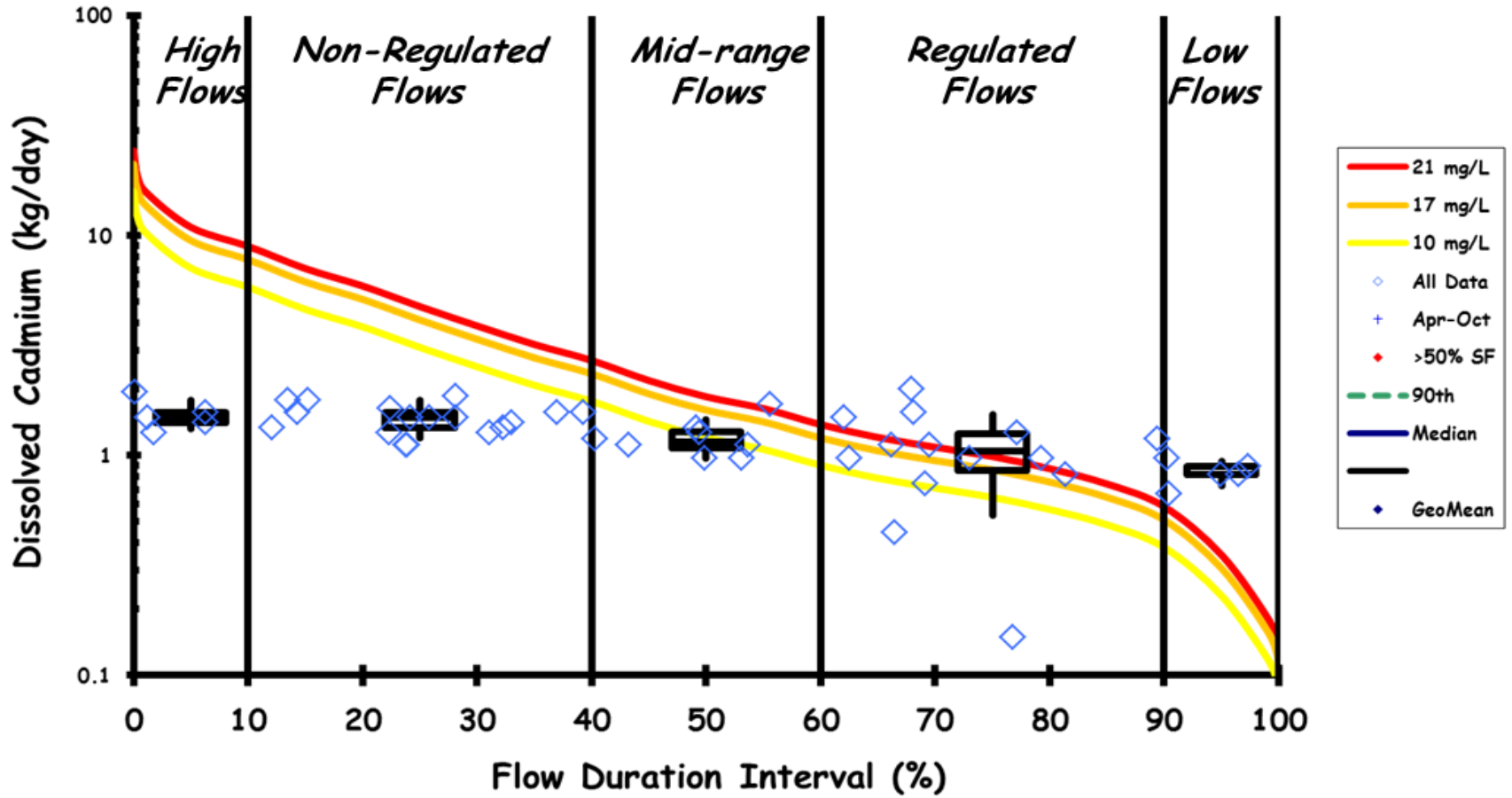
USGS Data & Gage 12419000 Duration Interval

BEMP data '04-'11

Spokane River at CDA River outlet, ID

Load Duration Curve

Cadmium Chronic CCC criteria, stn:12419000



USGS Data & Gage 12419000 Duration Interval

BEMP data '04-'11