Spokane River Cadmium, Lead and Zinc TMDL

Update

Spokane River Dissolved Oxygen TMDL Implementation Advisory Committee

By: Robert Steed,

IDEQ , Surface Water Ecologist

June 8, 2017

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

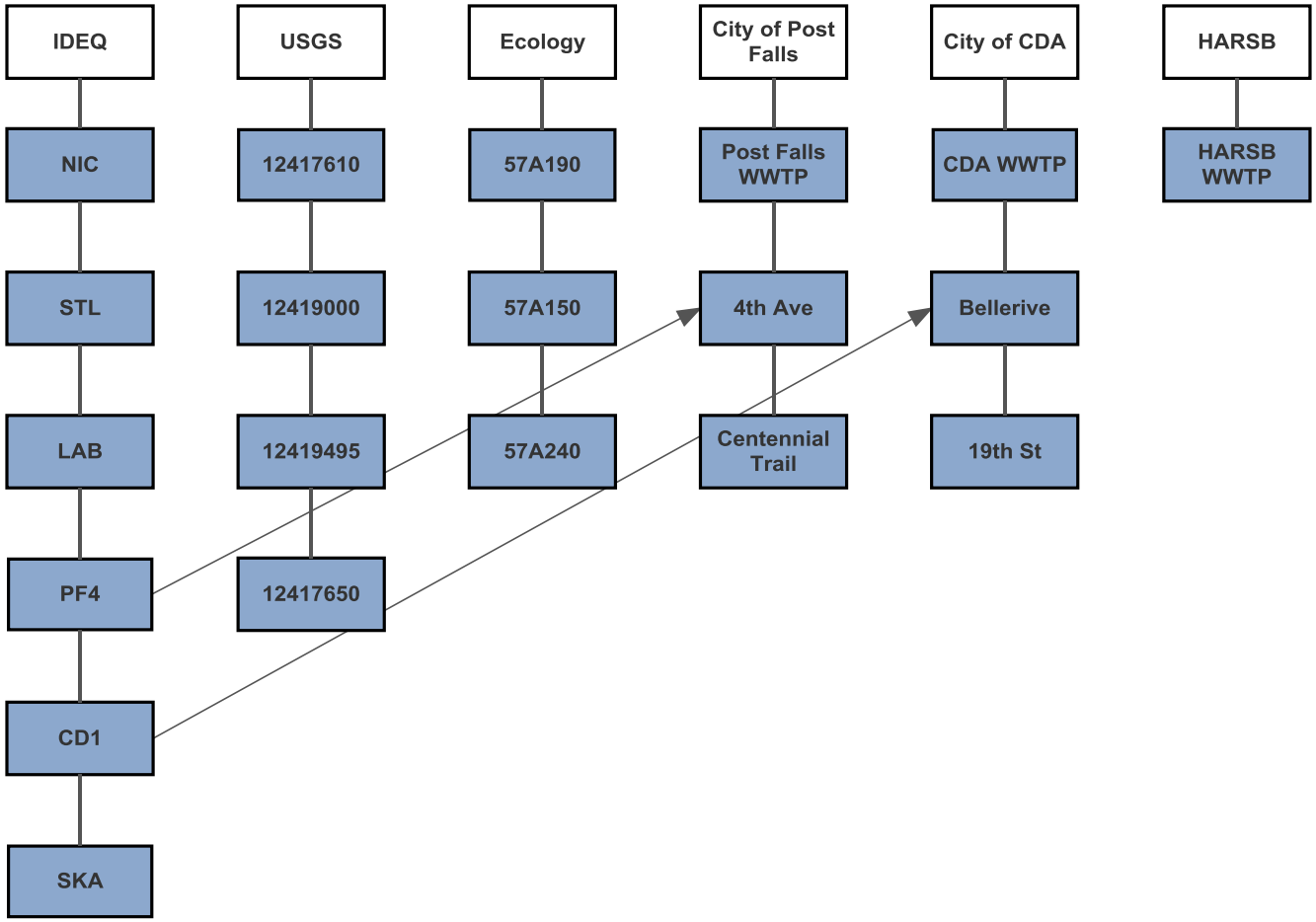
- The district judge ruled the TMDL was invalid for failure to comply with statutory guidelines
- According to Idaho Code §39-3611, DEQ must follow rulemaking provisions for any TMDLs for metals in the Coeur d'Alene River Basin, upstream from the headwaters of the Spokane River

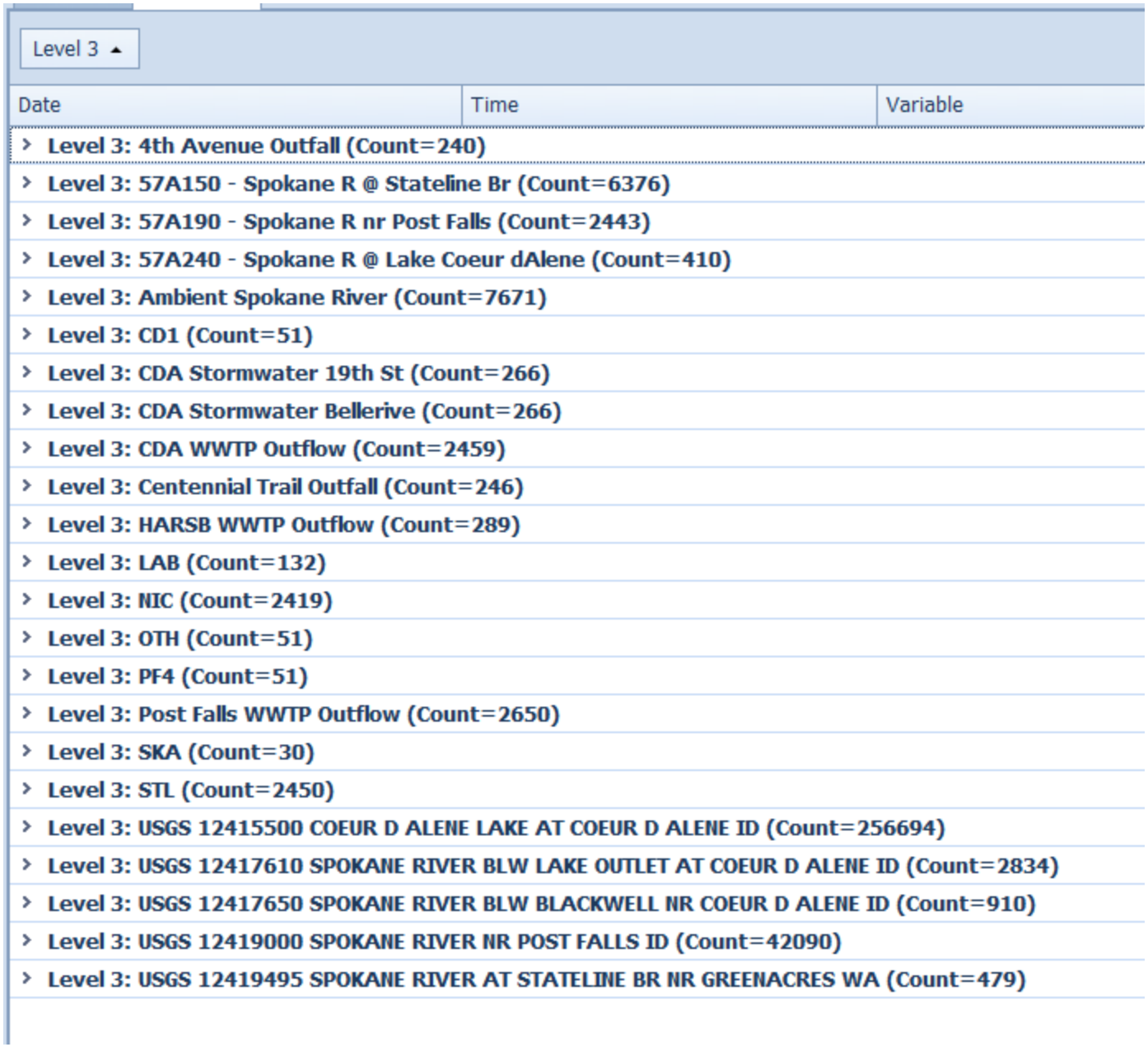
DEQ monitoring stateline station

North Idaho College station

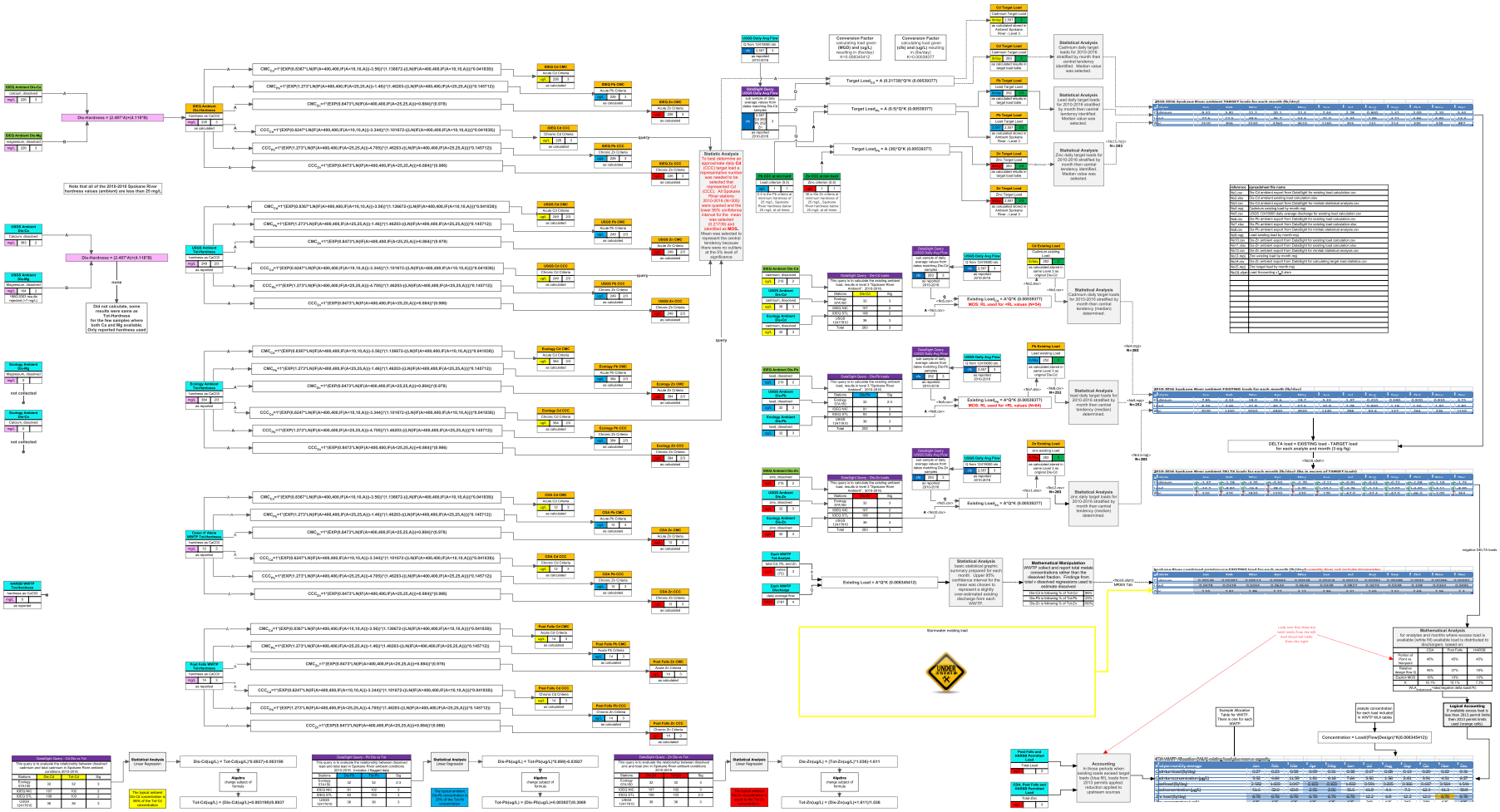
Prep Lab Filtration

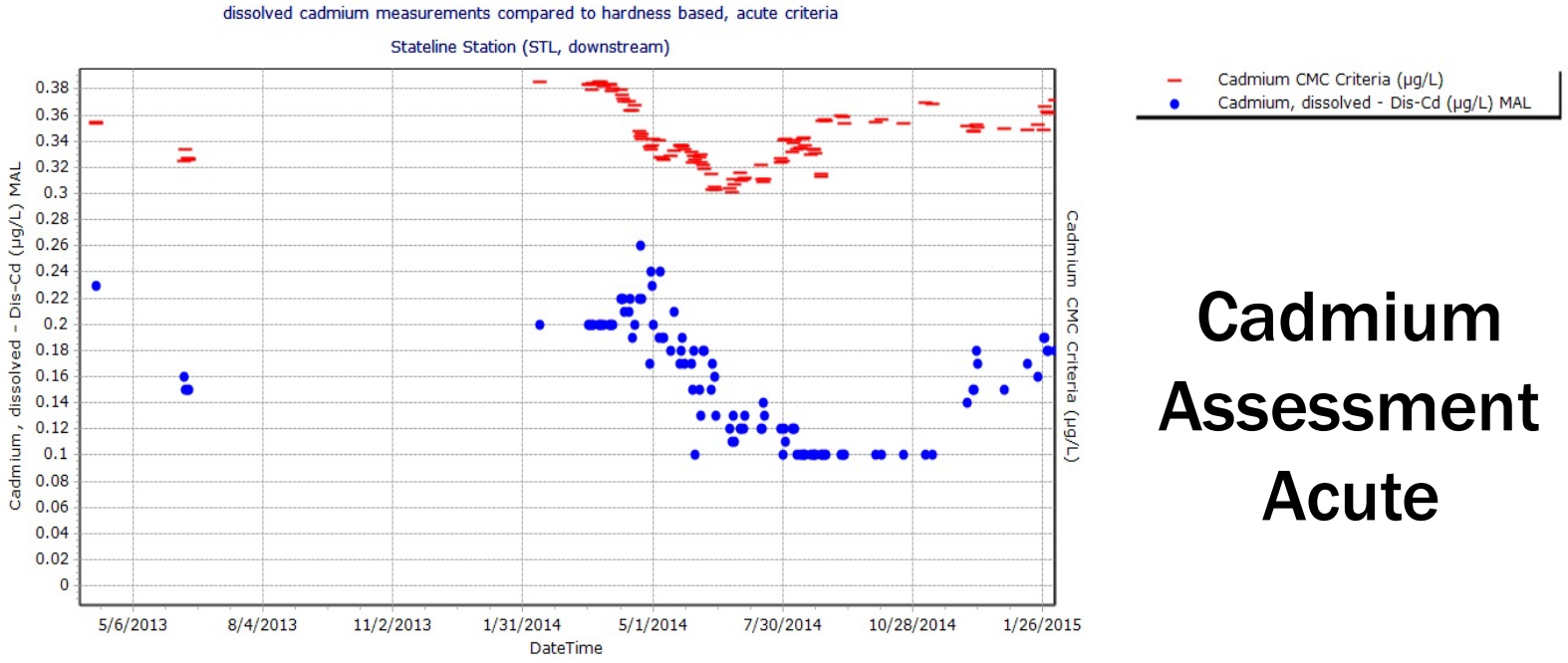
Data stations



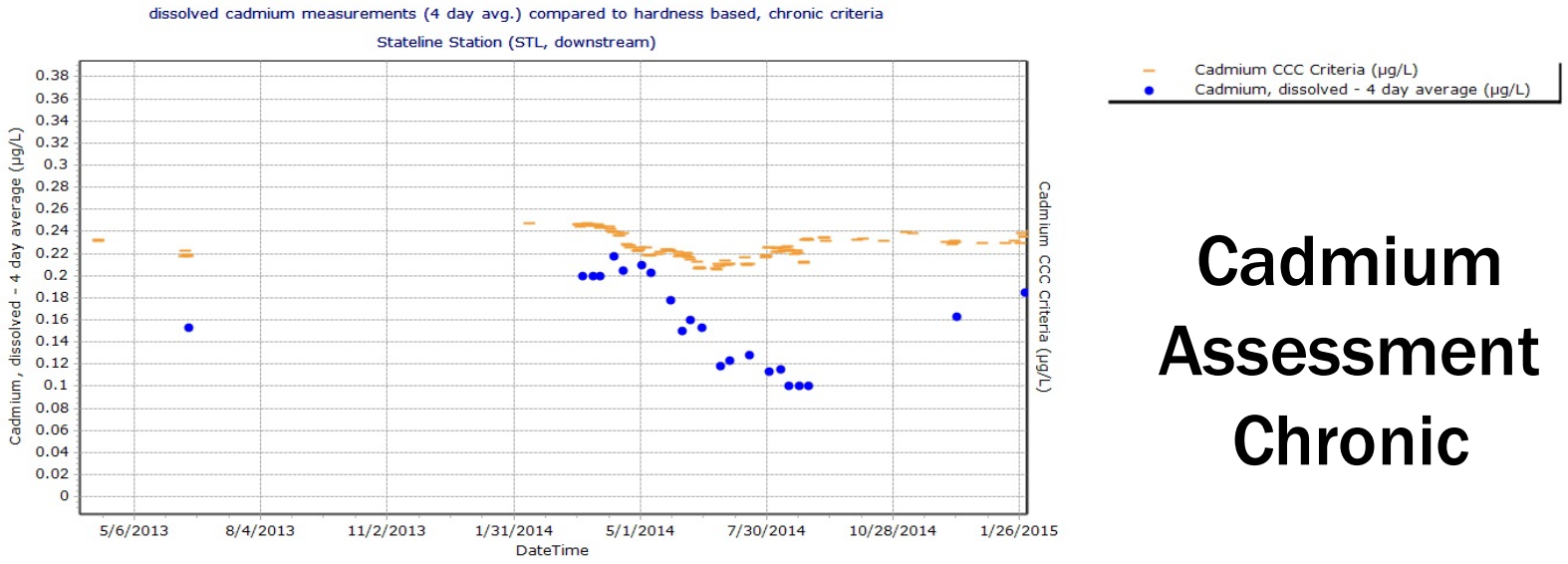

Level 3
Date
Time
Variable
Level 3: 4th Avenue Outfall (Count=240)
Level 3: 57A150 - Spokane R @ Stateline Br (Count=6376)
Level 3: 57A190 - Spokane R nr Post Falls (Count=2443)
Level 3: 57A240 - Spokane R @ Lake Coeur dAlene (Count=410)
Level 3: Ambient Spokane River (Count=7671)
Level 3: CD1 (Count=51)
Level 3: CDA Stormwater 19th St (Count=266)
Level 3: CDA Stormwater Bellerive (Count=266)
Level 3: CDA WWTP Outflow (Count=2459)
Level 3: Centennial Trail Outfall (Count=246)
Level 3: HARSB WWTP Outflow (Count=289)
Level 3: LAB (Count=132)
Level 3: NIC (Count=2419)
Level 3: OTH (Count=51)
Level 3: PF4 (Count=51)
Level 3: Post Falls WWTP Outflow (Count=2650)
Level 3: SKA (Count=30)
Level 3: STL (Count=2450)
Level 3: USGS 12415500 COEUR D ALENE LAKE AT COEUR D ALENE ID (Count=256694)
Level 3: USGS 12417610 SPOKANE RIVER BLW LAKE OUTLET AT COEUR D ALENE ID (Count=2834)
Level 3: USGS 12417650 SPOKANE RIVER BLW BLACKWELL NR COEUR D ALENE ID (Count=910)
Level 3: USGS 12419000 SPOKANE RIVER NR POST FALLS ID (Count=42090)
Level 3: USGS 12419495 SPOKANE RIVER AT STATELINE BR NR GREENACRES WA (Count=479)

Data/calculation tracking



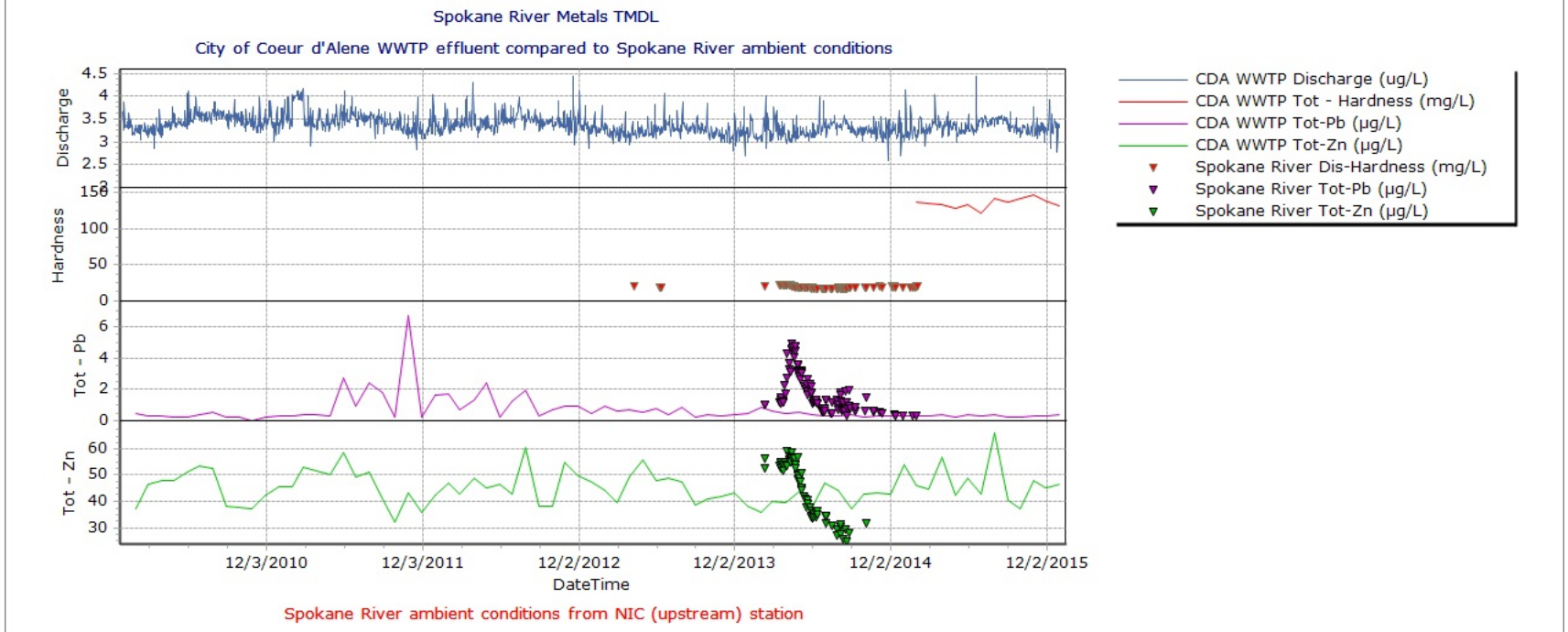


Cadmium Assessment Acute

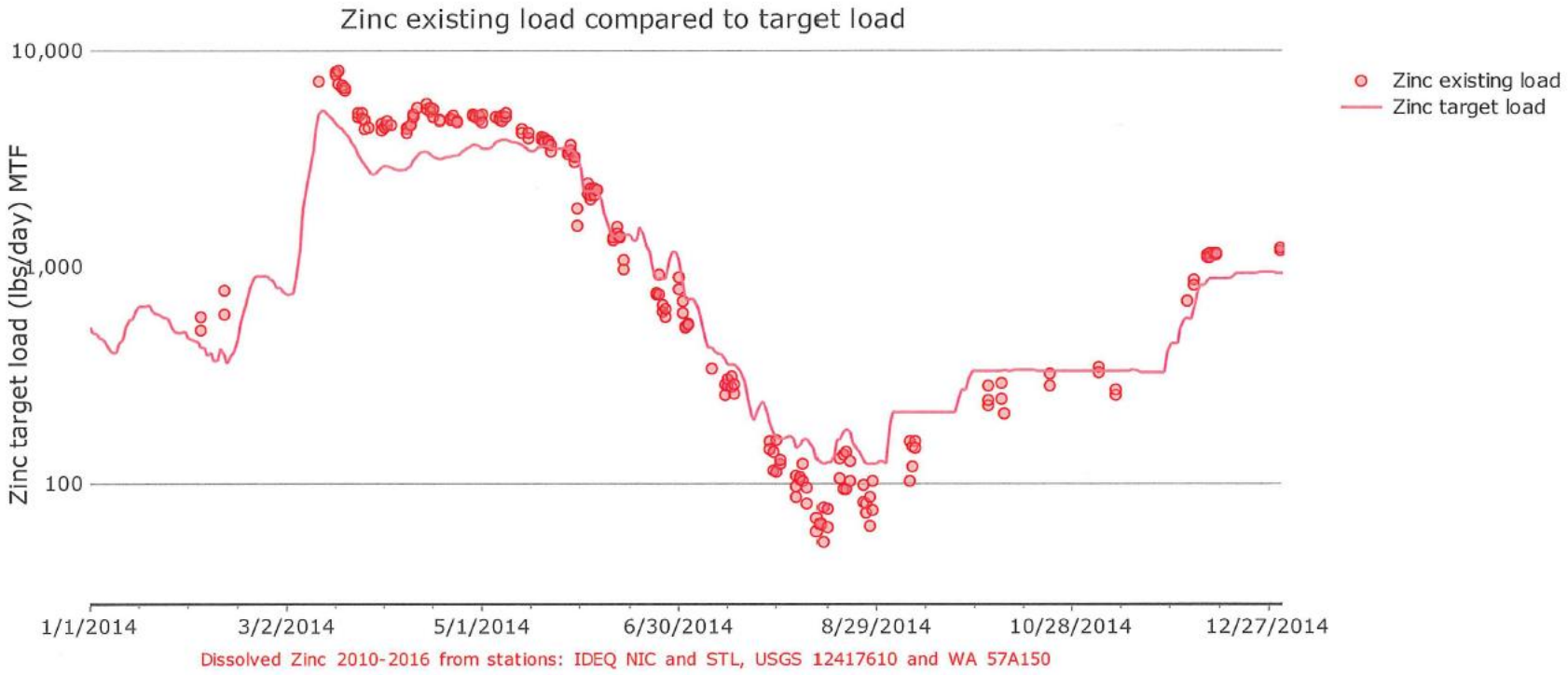


Cadmium Assessment Chronic

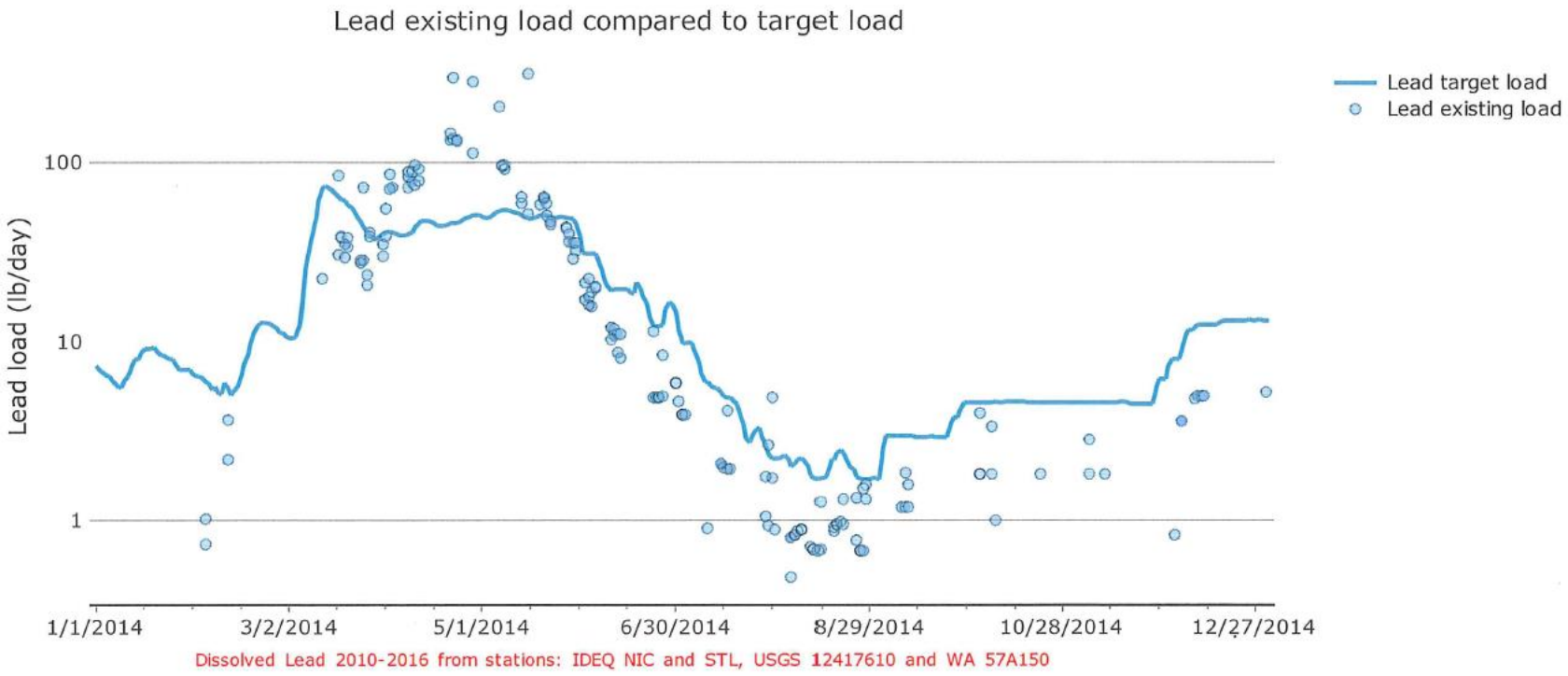
Typical waste water compared to ambient river concentrations



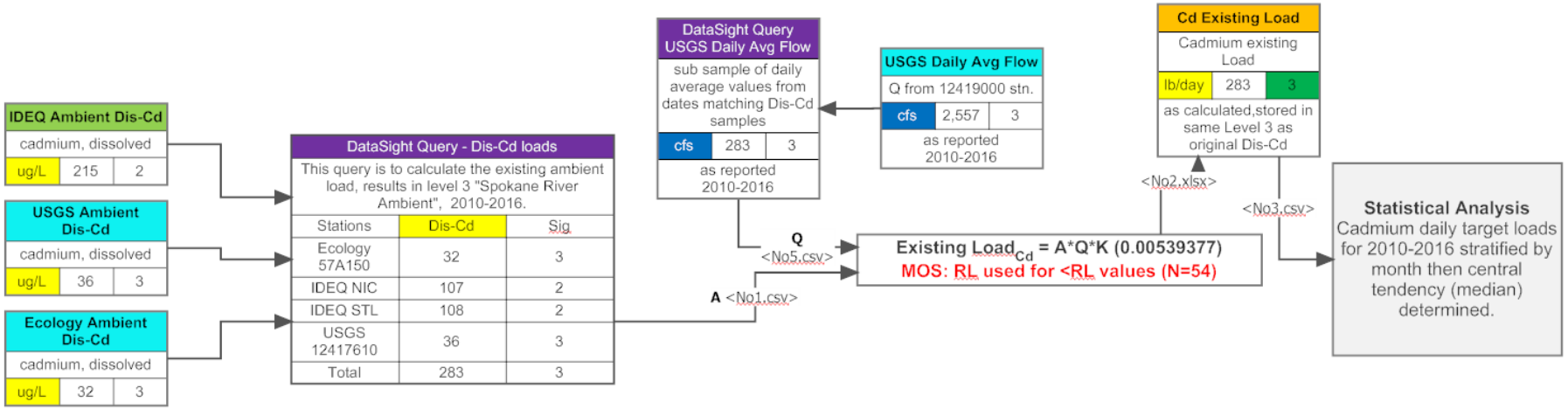
Zinc load comparison



Lead load comparison

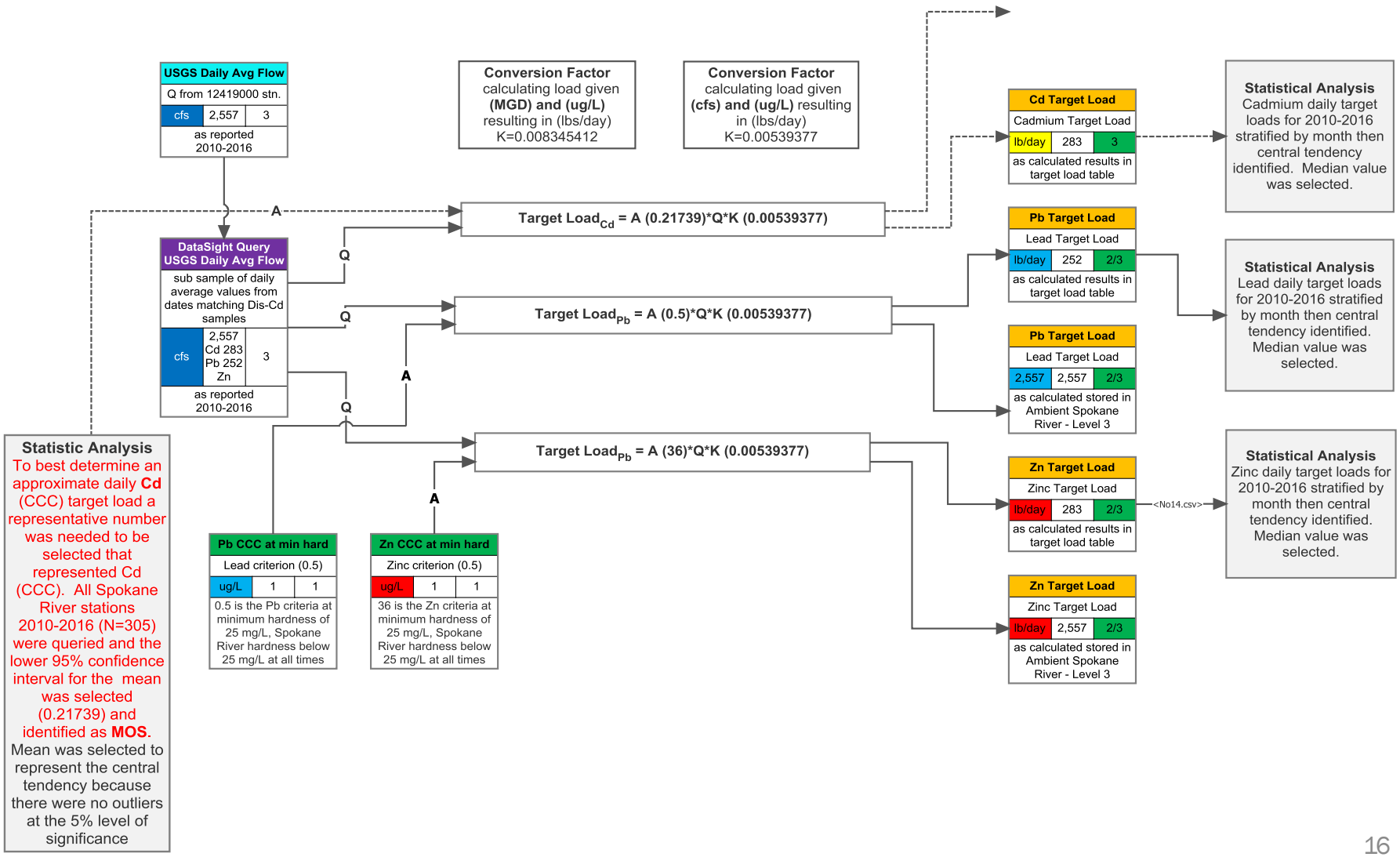


Load Calculation - Existing



2010-2016 Spokane River ambient EXISTING loads for each month (lb/day)												
analyte	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cadmium	7.85	4.53	18.0	19.6	19.7	5.33	1.37	0.410	0.590	0.920	0.910	3.71
Lead	8.36	3.66	31.8	84.7	57.5	10.9	2.08	0.830	1.19	1.56	1.82	4.80
Zinc	2020	1330	5050	4830	3930	1330	288	93.6	147	264	326	1150

Load Calculation - Target



Spokane River Cd, Pb and Zn TMDL: load development tables - preliminary findings - 03/30/17

2010-2016 Spokane River ambient TARGET loads for each month (lb/day)

analyte	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cadmium	9.32	5.81	21.2	20.1	21.4	7.44	2.28	0.840	1.31	2.00	2.10	5.44
Lead	22.6	12.5	48.6	46.7	54.3	21.0	5.34	1.96	3.21	4.96	4.93	13.3
Zinc	1510	856	3230	3260	3610	1160	355	131	214	330	328	887

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Lead	8.36	3.66	31.8	84.7	57.5	10.9	2.08	0.830	1.19	1.56	1.82	4.80
Zinc	2020	1330	5050	4830	3930	1330	288	93.6	147	264	326	1150

2010-2016 Spokane River ambient DELTA loads for each month (lb/day) (lbs in excess of TARGET loads)

analyte	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cadmium	↑ -1.47	↑ -1.28	↑ -3.20	↑ -0.50	↑ -1.70	↑ -2.11	↑ -0.91	↑ -0.43	↑ -0.72	↑ -1.08	↑ -1.19	↑ -1.73
Lead	↑ -14.2	↑ -8.84	↑ -16.8	↓ 38.0	↓ 3.20	↑ -10.1	↑ -3.26	↑ -1.13	↑ -2.02	↑ -3.40	↑ -3.11	↑ -8.50
Zinc	↓ 510	↓ 474	↓ 1820	↓ 1570	↓ 320	↓ 170	↑ -67.0	↑ -37.4	↑ -67.0	↑ -66.0	↑ -2.00	↓ 263

Spokane River overall percent reduction for each month (lb/day)

analyte	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cadmium												
Lead				45%	6%							
Zinc	25%	36%	36%	33%	8%	13%						23%

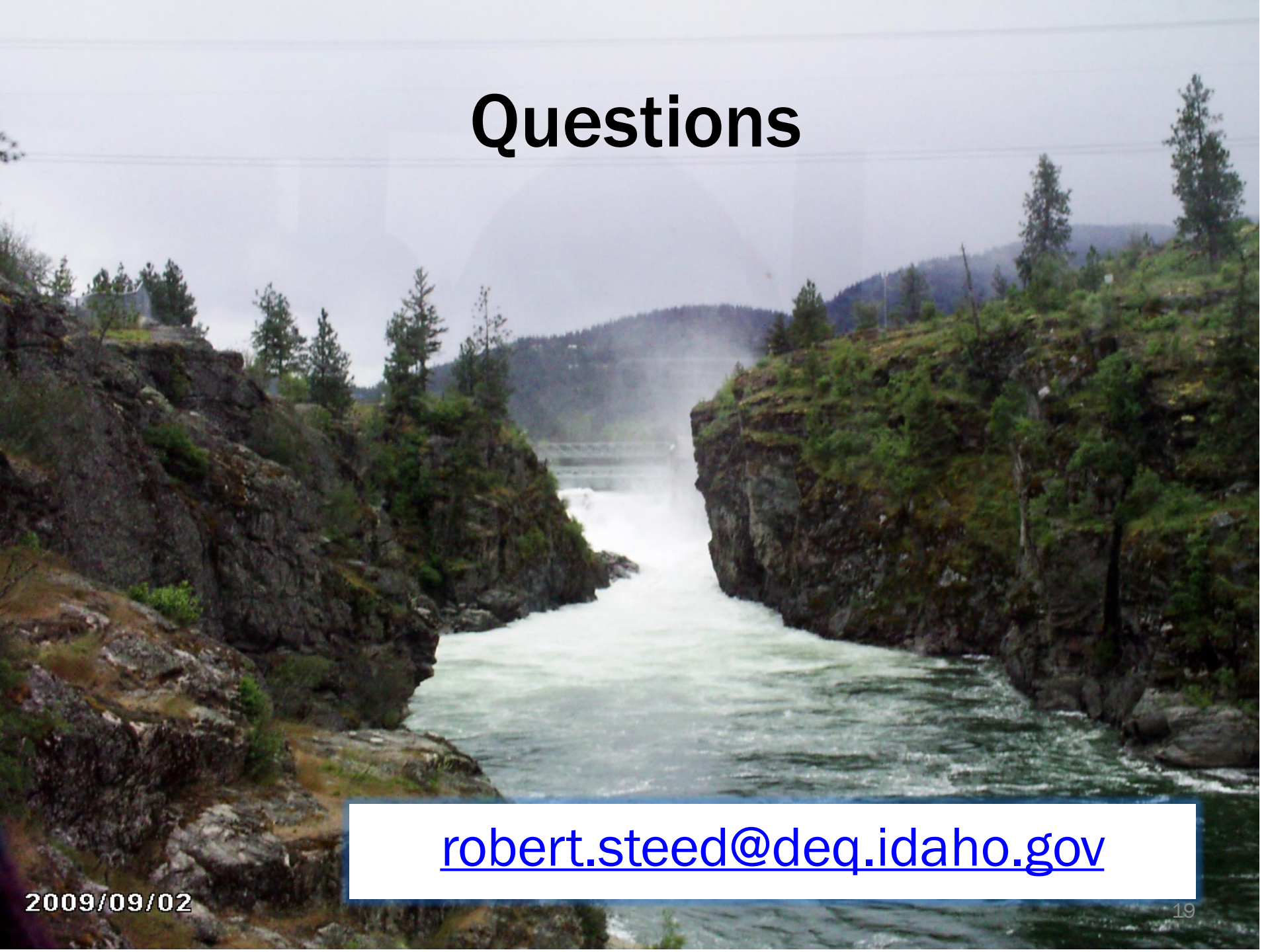
Spokane River combined pointsource EXISTING load for each month (lb/day) **currently does not include stormwater**

analyte	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cadmium	0.00539	0.00392	0.00514	0.00693	0.00448	0.00418	0.00423	0.00394	0.00489	0.0045	0.00396	0.00392
Lead	0.0478	0.0319	0.0434	0.0643	0.0646	0.0439	0.0827	0.0474	0.0339	0.108	0.0344	0.0495
Zinc	2.55	2.91	2.89	2.77	3.12	2.86	3.51	2.65	2.51	2.69	2.56	2.3

Spokane River Metals TMDL Watershed Advisory Group Meeting

- Idaho DEQ Coeur d'Alene Regional Office
- First Tuesday of the month
- Next meeting September 5
- 1:00 PM to 4:00 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/

Questions



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