

Reasonable Potential for the discharge to cause or contribute to an exceedance of the chronic criterion for lead was demonstrated, during October - March at West Boise.																				
Limits need to be calculated for lead based on the chronic criterion.																				
Calculating Limits																				
1. Calculate WLA (WLAa and WLAc) Qd = downstream flow = Qu + Qe cfs																				
2. Calculate LTAa and LTAc Cd = aquatic life criteria that cannot be exceeded downstream, ug/L This value must be converted back to total recoverable using a translator. Cd tot = Cd/translator																				
3. Determine the limiting LTA (i.e., min(LTAa and LTAc)) Qe = effluent flow, cfs																				
4. Use LTA to calculate AML and MDL Ce = concentration of pollutant in effluent = WLAa or WLAc, ug/L This value will be calculated as total recoverable.																				
Qu = upstream flow, cfs																				
Cu = upstream background concentration of pollutant, ug/L																				
MF = fraction mixing allowed																				
$WLA = ((Cd \cdot Qu \cdot MF) + Cd \cdot Qe) / Qe - (Qu \cdot MF \cdot Cu / Qe)$																				
$LTAa = WLAa \cdot e^{(0.5 \cdot sig^2 - z \cdot sig)}$																				
sig ² = ln(CV ² + 1) z = 2.326 @ 99th %ile probability basis CV = coefficient of variation = standard deviation/mean																				
$LTAc = WLAc \cdot e^{(0.5 \cdot sig^2 - z \cdot sig)}$																				
sig ² = ln((CV ² /4) + 1) z = 2.326 @ 99th %ile probability basis CV = coefficient of variation = standard deviation/mean																				
$MDL = LTA \cdot e^{(z \cdot sig - 0.5 \cdot sig^2)}$ = Maximum Daily Limit																				
sig ² = ln(CV ² + 1) z = 2.326 @ 99th %ile probability basis CV = coefficient of variation = standard deviation/mean																				
$AML = LTA \cdot e^{(z \cdot sig - 0.5 \cdot sig^2)}$ = Average Monthly Limit																				
sig ² = ln((CV ² /n) + 1) z = 1.645 @ 95th %ile probability basis n = number of sampling events required per month = 4																				
October - March																				
Determine Limiting LTA Calculate MDL Calculate AML																				
Calculate WLA Calculate LTAa & LTAa																				
Minimum LTA																				
MDL ug/L AML ug/L																				
Total Rec. Sig ² Sigma Tot. Rec. Sig ² Sigma Tot. Rec.																				
1Q10, cfs	69.1	acute	17.275	137.833333	2381.07083	5113.61667	0	No	0	202.01314	0.69314718	0.83255461	41.1977775							
(Qu) 7Q10, cfs	74.8	chronic	18.7	5.30223881	99.1518657	196.71306	0	No	0	7.97479583	0.22314355	0.47238073	2.97159918							
Qe, cfs	37.1													2.97159918	0.69314718	0.83255461	14.6	0.22314355	0.47238073	5.78
MF	0.25																			
translator	0.804																			
Cu, ug/L (TR)	0																			
CMC, ug/L (diss)	110.818																			
CCC, ug/L (diss)	4.263																			
CV	1																			
z99	2.326																			
z95	1.645																			
n	4																			