WATER QUALITY BASED
PERMIT LIMIT CALCULATIONS

Design Flow 6 mgd

Statistical variables for permit limit calculation

LTA Probability Basis	99%
MDL Probability Basis	99%
AML Probability Basis	95%

Dilution (Dil'n) factor is the inverse of the percent effluent concentration at the edge of the acute or chronic mixing zone.

This spreadsheet calculates water quality based permit limits based on the two value steady state model using the State Water Quality standards contained in WAC 173-201A. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 99. Last revision date 9/98. Written by G. Shervey

Permit Limit Calculation Summary / **Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations**

PARAMETER	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translator Acute	Metal Criteria Translator Chronic	Ambient Concentration	Water Quality Standard Acute	Water Quality Standard Chronic	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Comments	WLA Acute	WLA Chronic	LTA Acute	LTA Chronic	Limiting LTA	Coeff. Var. (CV)	# of Samples per Month	
					mg/L	mg/L	mg/L	mg/L	mg/L	lb/day	lb/day		mg/L	mg/L	mg/L	mg/L	mg/L	decimal	n	
Ammonia March - June	4.64	77.48	1.00	1.00	0.10	6.75	2.17	**13.0**	**30.9**	**649**	**1547**	**2.5% MZ Acute 25% MZ Chronic**	30.9	161	9.9	125.4	9.9	0.60	12.00	1.00
Ammonia July - Sep	2.35	14.46	1.00	1.00	0.10	6.75	1.43	**6.59**	**15.7**	**330**	**786**	**2.5% MZ Acute 25% MZ Chronic**	15.7	19	5.0	15.0	5.0	0.60	12.00	1.00
Ammonia October	3.75	41.39	1.00	1.00	0.10	6.75	1.43	**10.5**	**25.0**	**525**	**1252**	**2.5% MZ Acute 25% MZ Chronic**	25.0	55	8.0	42.9	8.0	0.60	12.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00

Flow 4.5 mgd

Statistical variables for permit limit calculation

LTA Probability Basis	99%
MDL Probability Basis	99%
AML Probability Basis	95%

Dilution (Dil'n) factor is the inverse of the percent effluent concentration at the edge of the acute or chronic mixing zone.

This spreadsheet calculates water quality based permit limits based on the two value steady state model using the State Water Quality standards contained in WAC 173-201A. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 99. Last revision date 9/98. Written by G. Shervey

Permit Limit Calculation Summary / **Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations**

PARAMETER	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translator Acute	Metal Criteria Translator Chronic	Ambient Concentration	Water Quality Standard Acute	Water Quality Standard Chronic	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Comments	WLA Acute	WLA Chronic	LTA Acute	LTA Chronic	Limiting LTA	Coeff. Var. (CV)	# of Samples per Month	
					mg/L	mg/L	mg/L	mg/L	mg/L	lb/day	lb/day		mg/L	mg/L	mg/L	mg/L	mg/L	decimal	n	
Ammonia March - June	5.85	102.97	1.00	1.00	0.10	6.75	2.17	**16.4**	**39.0**	**614**	**1463**	**2.5% MZ Acute 25% MZ Chronic**	39.0	214	12.5	166.7	12.5	0.60	12.00	1.00
Ammonia July - Sep	2.80	18.95	1.00	1.00	0.10	6.75	1.43	**7.84**	**18.7**	**294**	**701**	**2.5% MZ Acute 25% MZ Chronic**	18.7	25	6.0	19.7	6.0	0.60	12.00	1.00
Ammonia October	4.66	54.86	1.00	1.00	0.10	6.75	2.57	**13.1**	**31.1**	**490**	**1167**	**2.5% MZ Acute 25% MZ Chronic**	31.1	136	10.0	105.9	10.0	0.60	12.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00
			1.00	1.00														0.60	4.00	1.00