"METROPOLITAN" WWTP
LOCAL LIMIT FOR COPPER

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A. FLOWS

Q_{POTW}, mgd	2.85			
Q_{SIU}, mgd	1.75	consisting of:	13%	Specific SIUs
			87%	Nonspecific SIUs
Q_{BKGD}, mgd	***1.10***	**= Q_{POTW} - Q_{SIU}**		

B. MONITORING DATA

INFLUENT & EFFLUENT

Date	Influent mg/L	Effluent mg/L	Removal %	
27-Mar-08	0.052	0.007	**86.5**	**= 1 - Effluent/Influent**
31-Mar-08	0.061	0.006	**90.2**	
6-Apr-08	0.059	0.015	**74.6**	
10-Apr-08	0.066	0.011	**83.3**	
15-Apr-08	0.046	0.009	**80.4**	
24-Apr-08	0.057	0.012	**78.9**	
C_{INFL}, mg/L	*0.057*			**(mean)**
C_{EFFL}, mg/L		*0.010*		
ε, %			***82.3***	**(mean)**
			or *82.5*	= 1 - C_{EFFL} / C_{INFL}

BACKGROUND

Date	South Interceptor mg/L	West Interceptor mg/L
27-Mar-08	0.031	0.045
31-Mar-08	0.045	0.050
6-Apr-08	0.043	0.052
10-Apr-08	0.043	0.046
15-Apr-08	0.037	0.044
24-Apr-08	0.038	0.049
C_{BKGD}, mg/L	***0.044***	**(mean)**

SLUDGE

Date	Storage Tank mg/kg
Jun-07	1,000
Aug-07	1,400
Oct-07	1,200
Dec-07	1,100
Feb-08	800
Apr-08	900

C'_{SLUDGE}, *mg/kg* **1,100** **(mean)**

C. MAHL

PASS-THROUGH

Q_{POTW}, mgd = 2.850

ε, % = 82.3

$Cmax_1$, mg/L = (0.036)

$Lmax_1$, lb/day = **4.83** **= Q_{POTW} * $Cmax_1$ * 8.337 / (1 - ε)**

SLUDGE QUALITY

Q_{POTW}, mgd = 2.850

C_{INFL} mg/L = 0.057

C'max2, mg/kg = (4,300)

C'_{SLUDGE}, *mg/kg* 1,100

$Lmax_2$, lb/day = **5.29** **= Q_{POTW} * C_{INFL} * 8.337 * $C'max_2$ / C'_{SLUDGE}**

INHIBITION

Q_{POTW}, mgd = 2.850

Cmax3, mg/L = (1.0)

ε_P, % = (22)

Lmax3, lb/day = **30.5** **= Q_{POTW} * Cmax3 * 8.337 / (1 - ε_P)**

CONTROLLING

MAHL, lb/day = **4.83** **= min ($Lmax_1$, $Lmax_2$, $Lmax_3$)**

D. MAIL

Q_{BKGD}, mgd =	1.10	
C_{BKGD}, mg/L =	0.044	
L_{BKGD}, lb/day =	**0.40**	= Q_{BKGD} * C_{BKGD} * 8.337

MAHL, lb/day =	4.83	
Safety Factor, lb/day =	**0.48**	= 10% of MAHL
L_{BKGD}, lb/day =	0.40	
MAIL, lb/day =	**3.95**	= MAHL - Safety Factor - L_{BKGD}

E. LOCAL LIMIT

UNIFORM ALLOCATION METHOD

MAIL, lb/day =	3.95	
Q_{SIU}, mgd =	1.75	
C_{SIU}, mg/L =	**0.27**	= MAIL / (Q_{SIU} * 8.337)

INDUSTRIAL CONTRIBUTION METHOD

MAIL, lb/day =	3.95	
$Q_{SpecSIU}$, mgd =	**0.23**	= Q_{SIU} * $\%_{SpecSIU}$
C_{SIU}, mg/L =	**2.1**	= MAIL / ($Q_{SpecSIU}$ * 8.337)