DULCO net® Programming
Parameters Worksheet

Site Name: _____ Location: _____

Contact(s): _____ Contact Phone: _____

_____

Site Parameters

Oxidant: ◯ Gas ◯ Liquid*

Oxidant Capacity _____

*If Liquid: _____ % Active

Reductant: ◯ Gas ◯ Liquid*

Reductant Capacity _____

*If Liquid: _____ % Active

Peak Flow: _____ Mgd

Design Flow: _____ Mgd

Avg. Daily Flow: _____ Mgd

Flow Signal Available: ◯ Yes ◯ No

Flow Meter Location of contact chamber: ◯ Influent ◯ Efflucent

Flow Meter Calibration: 4mA = _____ Mgd

20mA = _____Mgd

How is your plant designed for nitrification? ◯ Full ◯ Partial

How often does your plant go between these? ◯ Daily ◯ Weekly ◯ Monthly ◯ Seasonally

Permit Values / Typical Values

TSS _____ / _____ ppm

BOD _____ / _____ ppm

NH3 _____ / _____ ppm

TRC _____ / _____ ppm

pH _____ / _____

Coliform _____ / _____

Extent of Treatment

◯ Primary ◯ Secondary ◯ Tertiary*

*Indicate origin of filter backwash water on your contact chamber sketch on attached drawing diagram / photo

Process On-Site

◯ Oxidation Basin(s) ◯ Extended Aeraion Basin(s) ◯ Inorganic Chemical(s) _____

_____

Mechanical Mixing

Cl_2 mechanical mixing ◯ Yes ◯ No*

$DeCl_2$ mechanical mixing ◯ Yes ◯ No*

*Be sure to sketch contact chamber and effluenct chamber chemical diffuser configuration on your contact chamber diagram on attached drawing diagram / photo

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Contact Chamber

Attach a drawing diagram and/or photo of the contact chamber(s). Indicate oxidant & reductant inject point(s) and mixer location (or diffuser configuration).

Channel Depth _____ ft.
Channel Width _____ ft.
Chamber Volume _____ gal

Sensor Placement:

L = distance between probe and Cl2 injection point (ft.)

F = avg. daily flow (mgd)

W = width (ft.)

D = depth (ft.)

T = desired time down stream (5-15 mins.)

$$L = 92.83 \times \left[\frac{F \times T}{W \times D}\right]$$

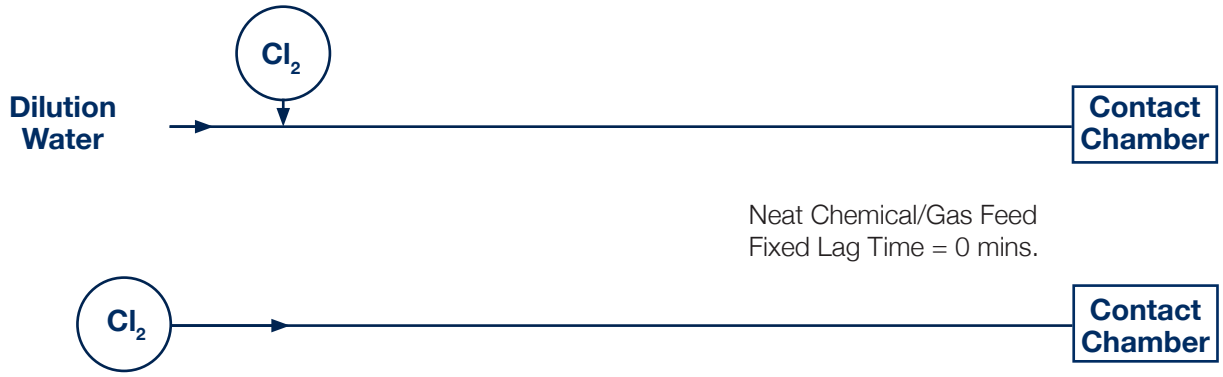
L = _____

Contact Chamber

Please reference unique attributes, occurances for this particular facility (by-passes, additional sources of chlorination, storm surge operation (before / after flow meter), high precentage of industrial waste, contact chamber clarity / routine maintance, etc.

Chlorine Injection

Check the system below that depicts your application. Indicate pipe length and diameter, calculate system fixed lag time.



Example:

Distance from Cl_2 addition point to contact chamber = 500 ft.

Pipe diameter = 2 inches

Dilution water flow = 20 gallons/minute

From the chart:

500 ft. ÷ 2.2 ft./sec = 227 seconds

= 3.8 minutes

Fixed Lag Time = 4 minutes

Velocity in Feet/Second					
Flow in US gals/ min	**Pipe Diam. 1 in.**	**Pipe Diam. 1.5 in.**	**Pipe Diam. 2.0 in.**	**Pipe Diam. 2.5 in.**	**Pipe Diam. 3.0 in.**
5 gpm	2.2	.9	.5	N/A	N/A
10 gpm	4.5	1.8	1.1	.76	.5
20 gpm	8.9	3.6	2.2	1.5	1.0
30 gpm	13.4	5.5	3.3	2.3	1.5

Cl_2 addition point to contact chamber _____ ft.

Pipe Diameter _____ in.

Fixed Lag Time _____ mins.

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Dosage Calculations

Rule of thumb conversions:

One gallon (12.5%) Sodium Hypochlorite = 1 lb. of gas Cl_2

One gallon (38%) Sodium Bisulfite = 2.6 lbs. gas SO_2

One gallon of water = 8.34 lbs.

Gas Chlorinator

System Water Flow = 1 - 10 Mgd

Max. Feed Capacity = 1000 lbs./day

1 gallon of water = 8.34 lbs.

$$\text{Dosage [ppm]} = \frac{\text{Max Feed Capacity}}{\text{Max Mgd} \times 8.34}$$

$$12 \text{ ppm} = \frac{1000}{10 \times 8.34}$$

Liquid Sodium Hypo

System Water Flow = 1 - 10 Mgd

Pump Capacity = 4.5 gallons/hour

1 gal NaOCl = 1 lb. gas chlorine

1 gallon of water = 8.34 lbs.

24 hrs/day

$$\text{Max. Feed} = 4.5 \text{ gal/hr} \times 24 \text{ hrs/day}$$

$$= 108 \text{ gal / day}$$

$$108 \text{ gal/day} \times 1 \text{ lb. gas / gal NaOCl}$$

$$= 108 \text{ lbs. / day}$$

Gas Sulfonator

System Water Flow = 1 - 10 Mgd

Max. Feed Capacity = 1000 lbs./day

1 gallon of water = 8.34 lbs.

$$\text{Dosage [ppm]} = \frac{\text{Max Feed Capacity}}{\text{Max Mgd} \times 8.34}$$

$$12 \text{ ppm} = \frac{1000}{10 \times 8.34}$$

Liquid Sodium Bisulfite

System Water Flow = 1 - 10 Mgd

Pump Capacity = 4.5 gallons/hour

1 gal $NaHSO_3$ = 2.6 lbs gas SO_2

1 gallon of water = 8.34 lbs.

24 hrs/day

$$\text{Max. Feed} = 4.5 \text{ gal/hr} \times 24 \text{ hrs/day}$$

$$= 108 \text{ gal / day}$$

$$108 \text{ gal/day} \times 2.6 \text{ lb. gas / gal } NaHSO_3$$

$$= 208.8 \text{ lbs. / day}$$

Calculation Area:

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136 Industry Drive • Pittsburgh, PA 15275 USA
(412) 787-2484 • Fax: (412) 787-0704
email: sales@prominent.us • **www.prominent.us**

PN: 0000000
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