Title: Chlorination Dosing in Raw Water

SOP No.:		**Revision No.:**	00
Effective Date:		**Supersedes No.**	Nil
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1.0 OBJECTIVE

The Objective of this SOP is to describe the procedure for chlorination dosing in raw water and checking of free chlorine.

2.0 SCOPE

This SOP is applicable for the procedure for chlorination dosing in raw water and checking of free chlorine at

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3.0 RESPONSIBILITY:

3.1 The Maintenance Operator shall be responsible:

3.1.1 Responsible for preparation of chlorine solution.

3.1.2 Responsible for checking chlorine dosage and record the same in log book

3.2 The Maintenance Engineer shall be responsible:

3.2.1 Responsible for assurance of proper dosing.

3.2.2 Responsible to take corrective action if any deviation observed.

4.0 ACCOUNTABILITY

Head –Engineering Services

5.0 PROCEDURE:

5.1 SOLUTION PREPARATION:

5.1.1 Prepare the solution on daily basis.

5.1.2 Take 10 liters sodium hypochlorite solution (5 to7%) in chemical dosing tank and add 10-liter potable water.

5.1.3 Mix the solution well.

5.2 START UP:

5.2.1 Switch ‘On’ the chemical dosing pumps.

5.2.2 Adjust the frequency and stroke length knob in the dosing pump to get the online Chlorine dosing rate of 5 ppm ± 2 ppm.

5.2.3 Check the ppm level after preparation of solution at the discharge of the pump by using chlorine analysis test kit, which is available in the plant.

5.3 CALCULATION FOR CHLORINE SOLUTION FLOW RATE TO GET 3PPM DOSE RATE:

5.3.1 EXAMPLE: Flow rate of the bore well : 10 m^3/hr

Chlorine dose required : 5 ppm

Concentration of chlorine solution in the chemical tank : 5% ± 0.5ppm

Chlorine solution flow rate (lph) = Flow rate of bore well (m^3/hr) x dose required (ppm)

10 Concentration of chlorine solution in the tank (%)

5.4 DOSING PUMP FREQUENCY AND STROKE LENGTH ADJUSTMENTS TO GET THE SPECIFIED DOSE RATE:

5.4.1 EXAMPLE: Capacity of the electronic dosing pump: 1.00 lph

i.e. 100% stroke length and 100% frequency gives a flow of 1.00 lph

Assume that the required flow rate is 0.5 lph. Therefore to get the required flow rate, adjust the stoke length to 50% and keep the frequency of dose on 100% for better dosing into the water.

6.0 ANNEXURES:

Annexure-I : Water chlorination record.

7.0 REFERENCES (S)

Nil

9.0 GLOSSARY

SOP	:	Standard Operating procedure
No	:	Number
ppm	:	Parts Per Millions
%	:	Percentage
hr	:	Hour
SS	:	Stainless Steel

lph : Liter per hour

STANDARD OPERATING PROCEDURE

TITLE: Water Chlorination Record

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ANNEXURE-I

Date	Solution prepared at (Hrs)	Dosing rate (ppm)	Dosing pump ON/OFF	Sodium hypochlorite	Remarks	Operator's sign.	Engineers Sign.

NOTE: Record the following parameters on daily basis.
ACCEPTANCE CRITERIA

Dosing rate
5ppm ± 2.0 ppm
PPM: Parts Per Million