

ENGINEERING DEPARTMENT

Title: Procedure for Testing of ETP Water

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1.0 OBJECTIVE:

To lay down a procedure for the Procedure for Testing of ETP water in Quality Control department.

2.0 SCOPE:

This SOP procedure is applicable for Quality Control Department of

3.0 RESPONSIBILITY:

Officer / Executive – QC

4.0 ACCOUNTABILITY: Head – QC

5.0 DEFINITION: NA

6.0 **PROCEDURE**:

6.1 Procedure for Sampling of ETP Water

- 6.1.1 ETP sample shall be collected by Officer/designee of ETP plant.
- 6.1.2 ETP sample shall be collected from outlet point of ETP plant
- 6.1.3 ETP Sample shall be received by Executive/Officer of QC dept.
- 6.1.4 Executive/Officer shall make the entry of ETP sample in inward register.
- 6.1.5 Executive/Officer shall allot the AR number to the sample and allocate to the analyst for testing as per specification.
- 6.1.6 Analyst shall perform the analysis as per respective STP and fill the report.
- 6.1.7 Analyst shall submit the complete report to the Executive/officer.
- 6.1.8 The testing frequency of the ETP sample shall be as given below in prescribed table:



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S.No	Parameters	Frequency	Acceptance criteria
1.	Description	Daily	Clear, Colourless and Characteristic odour
			solution
2.	рН	Daily	Between 5.5 and 9.0
3.	Total dissolved Solids	Monthly	NMT 2100 mg/ltr
4.	Total Suspended Solids	Monthly	NMT 100 mg/ltr
5.	Total Hardness	Daily	NMT 300 mg/ltr
6.	Chemical Oxygen	Monthly	NMT 250 mg/ltr
	Demand		
7.	Chloride	Monthly	NMT 600 mg/ltr
8.	Sulphate	Monthly	NMT 1000 mg/ltr
9.	Biochemical Oxygen	Monthly	NMT 30 mg/ltr
	Demand		
10.	Oil & Grease	Monthly	NMT 10 mg/ltr

7.0 ABBREVIATIONS

QC	-	Quality Control
QA	-	Quality Assurance
SOP	-	Standard Operating Procedure
S.No.	_	Serial Number

8.0 ANNEXURES

ANNEXURE TITLE OF ANNEXURE		FORMAT No.
Annexure – I	ETP Water Inward Register	
Annexure – II	ETP Water Analysis Protocol	

9.0 DISTRIBUTION:

- Controlled Copy No. 01 Head Quality Control
- Master Copy
 Quality Assurance



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10.0 REFERENCES:

In-House

11.0 REVISION HISTORY:

Revision No.	Change Control No.	Details of Changes	Reason of Changes	Effective Date	Done By
00	Not Applicable	Not Applicable	New SOP		



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ANNEXURE – I

ETP WATER INWARD REGISTER

S.No	Sampling	Sampling	AR	Date of	Sample	Analyzed	Checked	Remarks
	Point	Stage	Number	Sampling	Qty.	By/Date	By/Date	



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E	ANNEXU TP WATER ANAL	RE – II YSIS PROTOCOL	
Sample Point: ETP WATER (OU	TLET)	A. r. No. :	
Sample Quantity :		Date of Sampling :	
Sampled Issued by :		Date of Release :	
S No Test and Specification	Test Pro	cedure / Observation	Analyzed By

S.No.	Test and Specification	Test Procedure / Observation	Analyzed By (Sign. Date)
1.	Description	By Physical Observation	
	Clear and colourless.		
		Observation :	
2.	pH (Between 5.5 – 9.0)		
	Inst.ID	Observation :	
3.	Total Dissolved solids		
	NMT 2100 mg / lit.		
	Inst. ID		
4.	Total Suspended Solids : NMT 100 mg/lit.	(Final wt. in gm – Initial wt. in gms) x 10 ⁶ Total Suspended =	
		Solids Vol. of Sample Taken	
		Initial weight of the crucible (A) =gm	
		Volume of sample taken =ml	
		Final weight of the crucible after =gm	
		Drying to constant wt. at 105°C (B)	
		(B – A) x 1000 x1000 Total Suspended solids =	



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		 Sample Vol. in ml
		x 1000 x 1000
		50
		= mg / lit.
5.	Total Hardness NMT 300 mg / lit.	Reading x Molarity of E.D.T.A x 100 x
		Mg/Int. =
		Observation :
		=
6.	Chemical Oxygen Demand (C.O.D) :	By Conventional Method
	NMT 250 mg / lit.	(a – b) x Normality x 8000 Chemical Oxygen Demand =
		mg/L (ml)
		Volume of sample taken =
		ml of Ferrous ammonium Sulphate used for blank (a)
		= ml
		ml of Ferrous ammonium Sulphate used for test (b)
		=



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		ml	
		Normality of Ferrous ammonium	
		Sulphate =(N)	
		(a – b) x N x 8000 C.O.D = Sample taken (ml)	
		= mg / lit.	
7.	Chloride NMT 600 mg / lit.	Sample taken = (50 ml)	
		Vol. used = Volume Consumed of 0.01 M Silver Nitrate	
		Indicator : Potassium Chromate solution 5 %	
		Vol. used x 0.35453 x Molarity x 1000	
		0.01 x Spl. Vol.	
		=mg / lit.	
		≂	
		mg/lit.	
8.	Sulphate	Weight of residue (mg) x 1000 x 0.680	
	NMT 1000 mg / lit.	= Sample (ml)	
		X 1000 x 0.680	
		= -	
		= mg / lit.	



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9.	Biochemical Oxygen Demand (B.O.D) NMT 30 mg / lit.	
10.	Oil & Greese	Weight of the beaker after evaporation
		of hexane in $g(B) =$
		Weight of the empty cleaned dried
		beaker in g (A) =
		Weight of oil and grease in the sample
		in g (B - A) =
		= (B - A) X 1000 X 1000
		Volume of sample taken (ml)

Remarks: The Sample complies / does not complies as per In-house specification.

Checked By/Date