

Paper Wastewater Operating Cost Calculator

Blue block is the design datameter : be filled in
Brown: calculate process data
Red : last result for your process

I. Basic data:

Designed Water Quantity	35000.00	m3/d				
Project	COD(mg/l)	BOD(mg/l)	ammonia nitrogen(mg/l)	SS(mg/l)	total phosphorus(mg/l)	
Inlet water quality	1000.00	500.00	100.00	500.00	20.00	
Effluent water quality	50.00	10.00	5.00	10.00		

II. Calculations:

1. Calculation of labor costs

total number of people	10.00	people	payroll	2000.00	Yuan/month	Cost of tonnes of water	0.019	Yuan/Ton
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2. Calculation of electricity costs

Running power	1273.00	KW	Unit electricity costs	0.50	Yuan/KW.h	Cost of tonnes of water	0.436	Yuan/Ton
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3.Pre-treatment chemicals cost

PAC addition amount	100.00	ppm	unit cost	1350.00	Yuan/Ton	Cost of tonnes of water	0.135	Yuan/Ton
Amount of PAM added	12.00	ppm	unit cost	15500.00	Yuan/Ton	Cost of tonnes of water	0.186	Yuan/Ton

4. Biochemical treatment chemicals

Design Data								
Oxidation ditch influent BOD	690.00	mg/l	ammonia nitrogen	1.00	mg/l	total phosphorus	1.000	mg/l
Required carbon, nitrogen and phosphorus n	100.00			5.00			1.000	
Actual amount of nutrients needed			nitrogen source	33.50	mg/l	quantity of phosphorus source	5.900	mg/l
When phosphorus source is (NH2)2HPO4		Nitrogen content	0.22	phosphorus content	0.24			
(NH2)2HPO4 addition amount	24.58	mg/l	unit cost	2300.00	Yuan/Ton	Cost of tonnes of water	0.057	Yuan/Ton
When nitrogen source is CO(NH2)2		Nitrogen content	0.43					
CO(NH2)2 addition amount	65.63	mg/l	unit cost	1660.00	Yuan/Ton	Cost of tonnes of water	0.109	Yuan/Ton
When the phosphorus source is Na3PO4		Purity	0.98	phosphorus content	0.08			
Amount of Na3PO4 added	75.26	mg/l	unit cost	2990.00	Yuan/Ton	Cost of tonnes of water	0.225	Yuan/Ton
Addition of CO(NH2)2	78.27	mg/l	unit cost	1660.00	Yuan/Ton	Cost of tonnes of water	0.130	Yuan/Ton

5. Cost of deep treatment chemicals

PAC additive amount	360.00	mg/l	unit cost	1350.00	Yuan/Ton	Cost of tonnes of water	0.486	Yuan/Ton
Amount of PAM added	2.00	mg/l	unit cost	15500.00	Yuan/Ton	Cost of tonnes of water	0.031	Yuan/Ton
Addition of ferrous chemicals	600.00	mg/l	unit cost	400.00	Yuan/Ton	Cost of tonnes of water	0.240	Yuan/Ton
Additive amount of oxidizer	400.00	mg/l	unit cost	1000.00	Yuan/Ton	Cost of tonnes of water	0.400	Yuan/Ton
Amount of sulfuric acid added	0.00	mg/l	unit cost	800.00	Yuan/Ton	Cost of tonnes of water	0.000	Yuan/Ton
NaOH additive	0.00	mg/l	unit cost	1850.00	Yuan/Ton	Cost of tonnes of water	0.000	Yuan/Ton
Backwash air volume strength								
Water flushing strength								