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ORDINANCE NO. B-443

AN ORDINANCE AMENDING ORDINANCE B-162 AS PASSED BY THE GOVERNING BODY OF THE CITY OF VICTORIA, KANSAS ON OCTOBER 28, 1980, BY AMENDING USER CHARGE RATES IN THE CITY OF VICTORIA, COUNTY OF ELLIS, STATE OF KANSAS, TO PROVIDE FUNDS NEEDED TO PAY FOR ALL EXPENSES ASSOCIATED WITH THE CITY'S WASTEWATER TREATMENT WORKS, AND AMENDING APPENDIXES "A" AND "B" TO USER CHARGE ORDINANCE (Actual Use Rate Structure).

BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF VICTORIA, KANSAS:

Section 1. Section 15-323 of the Code of the City of Victoria, Kansas, is hereby amended to read as follows:

Sewer user charge shall be established by Ordinance for the City of Victoria.

Section 2. This Ordinance is to amend Article IV, Section 3 of Ordinance B-162 of the City of Victoria as follows:

Section 3: (Reference is made to Amended Appendix A of this ordinance). The minimum charge per month shall be $2.75. In addition, each contributor shall pay a user charge rate for operation and maintenance including replacement and debt retirement of $3.00 per 1000 gallons of water as determined in Ordinance B-181.

Section 3. This Ordinance is to amend Article IV, Section 4 of Ordinance B-162 of the City of Victoria as follows:

Section 4: (Reference made to Amended Appendix A). For those contributors who contribute wastewater, the strength of which is greater than normal domestic sewage, a surcharge in addition to the normal user charge will be collected. The surcharge for operation and maintenance including replacement is:

$0.2061	Per pound BOD
$0.2061	Per pound SS

AMENDED APPENDIX "A" TO USER CHARGE
ORDINANCE NO. B-443
(Actual Use Rate Structure)

This appendix presents the methodology to be used in calculating user charge rates and surcharges and illustrates the calculations followed in arriving at the year's user charges and surcharges. The unit costs established in this appendix are based on estimates of expense and loadings. The actual expenses and loadings that occur may differ from these estimates and certainly they will change as time passes. Therefore, the unit costs must be reestablished whenever necessary to reflect actual expenses and loadings. Once the system is in, unit costs can be adjusted on these figures.

1. Expenses: The total annual expenses associated with the treatment works as defined in Article II, Section 8, are estimated as follows:

Item	Annual Expenses
Billing and Collection	$ 2,500.00
Administrative	$ 2,500.00
Power	$ 4,300.00
Labor (Including fringe benefits)	$ 26,900.00
Material Costs	$ 4,000.00
Replacement Costs (See Amended Appendix B)	$ 6,662.00
Debt Service	$ 60,800.00
Other (Reserve)	$ 2,538.00
TOTAL	$ 110,200.00

2. Allocation of Expenses: The total operation and maintenance including replacement expense is allocated to the appropriate pollutants in the following manner. (Note: if debt service allocation is to be addressed in this ordinance, it may be allocated in the same manner or it may be allocated in any other manner that the grantee desires).

Annual $ to Treat Annual Flow = 80% annual cost allocated to flow x (total annual O&M budget minus billing, collection and administrative)
= .80 x 105,200 = 84,160.00

Annual $ to Treat Annual BOD = 10% annual cost allocated to BOD x (total annual O&M budget minus billing, collection and administrative)
= .10 x 105,200 = 10,520.00

Annual $ to Treat Annual SS = 10% annual costs allocated to SS x (total annual O&M budget minus billing, collection and administrative)
= .10 x 105,200 = 10,520.00

3. Loadings: The initial hydraulic loading is estimated to be 36,500,000 gal/year, based on total City metered usage for December 1999 through February 2000 (3 mos.) of

7,650,000 gal. x 4 = 30,600,000
Infiltration/Inflow = 5,900,000

Total = 36,500,000

The initial BOD loading is estimated to be 51,040 lbs/yr., calculated as follows:

(I/I is clear water; no BOD or SS)
Wastewater = 30,600,000 gal./yr x 8.34 lbs./gal.
= 255.2 million lbs/yr.
x 200 lbs. BOD/million – pounds water (200 mg/l – 200 ppm BOD in normal domestic sewage)

- 51,040 lbs. BOD/yr.

The initial SS loading is estimated to be 51,040 lbs./yr.
(Same as above)

4. Unit Costs:

Initial unit cost for flow in $/gallons =
annual $ to treat annual flow = 84,160
Estimated annual hydraulic loading = 36,500,000
= $2.3058

Initial unit cost for BOD in $/pound =
annual $ to treat annual BOD = 10,520
Estimated annual BOD loading = 51,040
= $0.2061/lb of BOD

Initial unit cost for SS in $/pound =
annual $ to treat annual SS = 10,520
Estimated annual SS loading = 51,040
= $0.2061/lb of SS

The unit costs for BOD, SS and OTHER Pollutants are to be inserted in Article IV, Section 4, of Ordinance B-162.

5. Minimum Charge:

Annual billing, collection and administrative costs	= $ 5,000.00
Annual cost to treat infiltration /inflow (assumed clear water) = unit cost to treat flow x annual infiltration inflow = 2.3058/1000 gal. x 5,900,000	= $ 13,604
TOTAL Annual Minimum Cost	= $ 18,604
Minimum Charge User/Billing Period (560 Users)	= $ 2.77

Rounded Minimum charge = $2.75/user/billing period

6. Residential User Unit Charge: The residential user unit charge is calculated as follows using the pollutant concentrations defining normal domestic wastewater in Article II, Section 2, of Ordinance B-162.

Residential unit charge per 1000 gal. =

unit flow charge		= $2.3058/1000 gal.
+		+
(unit BOD charge) x	(lbs BOD/1000 gal.)	
= ($0.2061/lb BOD)	(BOD_{ND} x .00834lbs/1000 gal.)	
= ($0.2061/lb BOD)	(200ppm x .00834lbs/1000 gal.)	
= ($0.2061/lb BOD)	(1.668 lbs BOD)	= $0.3438/1000 gal.
+		+
(unit SS charge) x	(lbs SS/1000 gal.)	
= ($0.2061/lb SS)	(SS_{ND} x .00834lbs/1000 gal.)	
= ($0.2061/lb SS)	(200 ppm x .00834lbs/1000 gal.)	
= ($0.2061/lb SS)	(1.668 lbs SS/1000 gal.)	= $0.3438/1000 gal.
Residential Unit Charge		= $2.9934/1000 gal.

Rounded Residential Unit charge = $3.00/1000 gal.

Where:

Unit flow charge is in $/1000 gal. from paragraph 4
Unit BOD charge is in $/lb of BOD from paragraph 4
Unit SS charge is in $/lb of SS from paragraph 4
BOD_{ND} & SS_{ND} are the normal strength for domestic sewage as defined in Article II, Section 2 of this ordinance
and .00834 is a unit conversion factor.

This total residential unit charge is to be inserted in Article IV, Section 3, of Ordinance B-162.

An example of a residential charge for a resident of the City of Victoria follows:

Assume: Average Monthly meter reading 5000 gallons
Standard Strength Waste (200 mg/l BOD, 200 mg/1 SS)

Minimum Charge	$ 2.75
Residential Unit Charge ($3.00/1000 gal.)	$15.00
Monthly Bill	$17.75

7. Extra Strength User: For users who contribute wastewater that has greater strength than normal domestic wastewater, the user charge will be calculated as follows:

Total monthly charge to extra strength users =
charge to residential user + surcharge for BOD (if appropriate)

+ surcharge for SS (if appropriate)

Total monthly charge to extra strength users =

Minimum Charge
+ v (residential unit charge)
+ v (unit BOD charge) $(BOD_{ES} - BOD_{ND})$ (.00834)
+ v (unit SS charge) $(SS_{ES} - SS_{ND})$ (.00834)

Where: Total monthly charge to extra strength user is in dollars.

Minimum charge is in dollars as calculated in paragraph 5
v is the volume of wastewater in 1000 gallons
discharged by the extra strength user during the month

Residential unit charge is in $/1000 gal as calculated in paragraph 6

Unit BOD charge is in $/lb BOD from paragraph 4

Unit SS charge is in $/lb SS from paragraph 4

BOD_{ES} is the average BOD concentration in milligrams per liter (mg/l) contributed by the extra strength user during the month

SS_{ES} is the average SS concentration in mg/l contributed by the extra strength user during the month

AMENDED APPENDIX "B" TO USER CHARGE
ORDINANCE B-443

This appendix contains a replacement schedule that was developed to determine the amount of revenue needed to fund the Replacement Account. The replacement schedule lists the equipment in the treatment works, the estimated dates when the equipment will have to be replaced, and the estimated cost of replacement (including an allowance for inflation) over the useful life of the treatment works. Also listed is the estimated cash flow that will occur in the Replacement Account. The replacement dates and costs shown are estimates; the actual replacement dates and costs could be significantly different from those shown. If the actual replacement expenses differ significantly from those listed in the replacement schedule, the funding of the Replacement Account shall be adjusted accordingly.

REPLACEMENT SCHEDULE

Years from Treatment Works in Operation	Replacement Item	Expenditure	Replacement Account Income (UC + Interest)	Balance
1	N/A	$0	$6662 + 0	$6,662
2	N/A	0	6662 + 400	$13,724
3	N/A	0	6662 + 823	$21,209
4	N/A	0	6662 + 1272	$29,143
5	N/A	0	6662 + 1748	$37,553
6	N/A	0	6662 + 2253	$46,468
7	N/A	0	6662 + 2788	$55,918
8	N/A	0	6662 + 3355	$65,935
9	N/A	0	6662 + 3956	$76,553
10	Chemical Injection System Force Main Air Valves	14,661	6662 + 4593	$73,147
11	N/A	0	6662 + 4389	$84,198
12	N/A	0	6662 + 5052	$95,912
13	N/A	0	6662 + 5755	$108,329
14	N/A	0	6662 + 6500	$121,491
15	N/A	0	6662 + 7289	$135,442
16	N/A	0	6662 + 8126	$150,230
17	N/A	0	6662 + 9014	$165,906
18	N/A	0	6662 + 9954	$182,522
19	N/A	0	6662 + 10951	$200,135
20	Plant Pump Station Upgrade Chemical Injection System Town Lift Station Replacement Force Main Air Valves Lagoon Gate Valves	218,873	6662 + 12008	-$68

CALCULATION OF ANNUAL REPLACEMENT REVENUE

I.	Today's Replacement Cost	5 Years	10 Years	15 Years	20 Years
	Plant Pump Station Upgrade				$30,000
	Chemical Injection System		$5,000		$ 5,000
	Town Lift Station				$30,000
	Force Main Air Valves		$4,000		$ 4,000
	Lagoon Gate Valves				$ 4,500
		$0.00	$9,000	$0.00	$73,500

II.	Future Replacement Cost Interest Factor using 5% inflation	5 Years 1.276	10 Years 1.629	15 Years 2.079	20 Years 2.653
	$0 (5 Year Equipment Cycle)	N/A	N/A	N/A	N/A
	$9,000 (10 Year Equipment Cycle)	N/A	$14,661	N/A	$23,877
	$0 (15 Year Equipment Cycle)	N/A	N/A	N/A	N/A
	$73,500 (20 Year Equipment Cycle)	N/A	N/A	N/A	$194,996

III.	Annual Replacement Revenue Needed:				
	Future Replacement Costs:	$0.00	$14,661	$0.00	$218,873
	SFF-10 years/6%: (.07587)x($14,661) = $1,112		-14,661 $ 0.00		-14,661 $204,212
	SFF-20 years/6%: (.02718)x($204,212) = $5,550				-204,212 $0.00

Total Annual Replacement Revenue to be Collected = $1,112 + $5,550 = $6,662

BOD_{ND} & SS_{ND} are the normal domestic strength in mg/l as defined in Article II, Section 2, of this ordinance

and .00834 is a unit conversion factor.

An example user charge calculation for an extra strength user of the treatment works as follows:

Assume: Water metered to user = 20,000 gallons
BOD – 300 mg/l
SS – 400 mg/l

Minimum Charge:	$ 2.75
Standard Charge/1000 gallons:	
Residential Unit Charge (3.00/1000 gal.)	$60.00

Surcharge:

BOD: 20 x (0.2061/lb BOD) x (300mg/l – 200mg/l) x (.00834) = $ 3.44
SS: 20 x (0.2061/lb SS) x (400 mg/l - 200mg/l) x (.00834) = $ 6.88
$73.07

(Reference is made throughout this appendix to the original sewer user charge Ordinance B-162.)