

**Ordinance #128
Sewer User Charge System**

December 2001

Owner:

**Town of Arriba
711 Front Street
Box 10
Arriba, CO 80804**

Prepared By:

**GMS, INC.
Consulting Engineers
611 North Weber, Suite 300
Colorado Springs, Colorado 80903**

**Telephone: (719)475-2935
Telefax: (719)475-2938**

Ordinance No. 128

Sewer User Charge System

An Ordinance establishing the procedure for determining equitable sewer service charges to be levied on all users who discharge wastewater to or are connected to the wastewater system operated by the Town of Arriba and providing certain prohibitions.

Be it ordained by the Board of Trustees of the Town of Arriba.

SECTION 1. PURPOSE

The purpose of this Ordinance shall be to generate sufficient revenue to pay all costs for the operation, maintenance and debt retirement of the complete wastewater system. The costs shall be distributed to all users of the system in proportion to each user's contribution to the total loading of the treatment works. Factors such as strength - Biochemical Oxygen Demand (BOD), volume and delivery flow rate characteristics shall be considered and included as the basis for the user's contribution to ensure a proportional distribution of operation and maintenance costs to each user (or user class) where appropriate. The monthly user charge rate and other applicable sewer related rates as set forth herein may be amended from time to time by a resolution of the Board of Trustees to provide for adequate revenues for the Sewer Fund.

SECTION 2. DETERMINING THE TOTAL ANNUAL COST OF OPERATION AND MAINTENANCE

The Town of Arriba shall determine the total annual cost of operation and maintenance of the wastewater system which are necessary to maintain the capacity and performance, during the service life of the treatment works, for which such works were designed and constructed. The total annual cost of operation and maintenance shall include, but need not be limited to, labor, repairs, equipment replacement, maintenance, necessary modifications and a reasonable contingency fund.

SECTION 3. DETERMINING ANNUAL DEBT SERVICE

The Town of Arriba shall determine the total annual debt service associated with the wastewater system. The total cost of debt service shall include principal, interest and any associated service fees.

SECTION 4. DETERMINING EACH USER'S WASTEWATER CONTRIBUTION

The Town of Arriba shall determine the average nonirrigation monthly potable water consumption for residential users within the town's service area. Residential usage may be gauged from the November through March water meter records for any or all months determined appropriate by the Town of Arriba. Residential users will constitute one user class. All nonresidential users will have their equivalent residential unit determination made as a result of comparing their nonirrigation monthly potable water consumption to that of the average residential consumption. Those nonresidential users who have monthly nonirrigation water consumption that is equal to or below that of the average residential usage shall be assessed a fee equivalent to a residential unit. Those nonresidential users having nonirrigation water consumption greater than the average residential usage shall be

assessed a monthly fee based upon the ratio of their water usage versus the average residential water usage times the residential monthly fee.

SECTION 5. DETERMINING A SURCHARGE SYSTEM FOR USERS WITH EXCESS BOD

The Town of Arriba will assess a surcharge rate for all non-residential users discharging wastes with BOD strengths greater than the average residential user. Such users will be assessed a surcharge sufficient to cover the cost of treating their above-normal strength wastes. Normal strength wastes are considered to be 220 mg/l BOD₅. The surcharge rate structure for such above-normal strength waste dischargers is attached (see Appendix A of this Ordinance).

SECTION 6. DETERMINING EACH USER'S WASTEWATER SERVICE CHARGE

Each non-residential user's cost for its discharge to the wastewater system, as determined in Sections 4 and 5, shall be added together to determine such user's annual wastewater service charge. Residential users are considered to be one class of user and an equitable service charge may be determined for each user based on an estimate of the wastewater contributions of this class of user. The governing body may classify industrial, commercial and other non-residential establishments as a residential user, provided that the wastes from these establishments are no greater than the wastes from the average residential user with respect to volume and BOD. Each user's wastewater treatment cost contribution will be assessed in accordance with the attached rate schedule (see Appendix B of this Ordinance). The rate to be charged for sewer system use to properties lying outside the existing town limits shall be 2.0 times the rate charged for similar properties within the town limits.

SECTION 7. WASTEWATER FACILITIES REPLACEMENT FUND

A reserve fund called the Wastewater Facilities Replacement Fund is hereby established within the sewer fund for the purpose of providing sufficient funds to be expended for obtaining and installing equipment, accessories and appurtenances during the useful life of the wastewater treatment facilities necessary to maintain the capacity and performance for which such facilities are designed and constructed (see Appendix C of this Ordinance).

SECTION 8. PAYMENT OF THE USER'S WASTEWATER SERVICE CHARGE AND PENALTIES

The Town of Arriba shall submit an annual statement to the user for the user's annual wastewater service charge or one-twelfth of the user's annual wastewater service charge may be included with the monthly water and/or sewer billing. The Town of Arriba shall add a penalty of five dollars (\$5.00) if the payment is not received by the Town of Arriba by the twenty fifth (25th) day of the month following the month for which charges are assessed.

Users are responsible to pay the services charges assessed by the town on an ongoing basis as long as the user's tap is physically connected to the town's wastewater collection system. No temporary termination of the monthly service charge will be allowed.

All sewer use charges shall constitute a lien upon any lots, land, buildings, or premises served and in the event said charges shall not be paid when due, the Board of Trustees may certify the charge or charges to the County Treasurer of Lincoln County, Colorado to be placed upon the Tax List to be collected in the manner as other taxes are collected with twelve (12) percent added thereto to defray the cost of collection. All laws of the State of Colorado for the Assessment in Collection of general collection including the laws for the

Sale of Property for Taxes and redemption of the same shall apply. Should any user fail to pay the user wastewater service charge and penalty within forty (40) days of the due date, the Town of Arriba may stop the wastewater service to the property. Prior to terminating wastewater service the town shall send a notice to the address of the customer concerned as shown on the town records, stating the reason for the termination of service, the date upon which service may be terminated unless the charges are paid or the specified violation is corrected. Such notice shall be included in the combined "past due statement" and shut-off notice. The shut-off date shall be at least ten (10) days after the deposit in the mail of the letter giving notice of termination.

The provisions of Ordinance No. 114 shall remain in full force in effect with respect to past due accounts that exceed 24 months and/or \$500 in assessments with respect to the charges required for reinitiation of wastewater service together with all other provisions not changed herein.

SECTION 9. REVIEW OF EACH USER'S WASTEWATER SERVICE CHARGE

The Town of Arriba shall review the total annual cost of operation, maintenance and debt retirement as well as each user's Wastewater Contribution not less often than every two years and will revise the system as necessary to assure equity of the service charge system established herein and to assure that sufficient funds are obtained to adequately operate, maintain and retire the debt associated with the wastewater treatment works. If a significant user, such as an industry, has completed in-plant modifications which would change that user's Wastewater Contribution, the user can present, at a regularly scheduled meeting of the governing body, such factual information and the Town of Arriba shall then determine if the user's Wastewater Contribution is to be changed. The Town of Arriba shall notify the user of its findings as soon as practical.

SECTION 10. NOTIFICATION

Each user will be notified, at least annually, in conjunction with a regular bill, of the rate and that portion of the user charges which are attributable to wastewater treatment services and debt retirement.

SECTION 11. WASTES PROHIBITED FROM BEING DISCHARGED TO THE WASTEWATER TREATMENT SYSTEM

The discharge of any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly, or by interaction with other wastes, to contaminate the sludge of any municipal systems, or to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in or have an adverse effect on the water receiving any discharge from the treatment works is hereby prohibited.

Each user who discharges any toxic pollutants which cause an increase in the cost of managing the treatment process or the sludge of the Town of Arriba wastewater treatment facility shall pay for such increased costs.

The Town of Arriba's "Regulation of Sewer Use" Ordinance and Ordinance Number 114 contain additional requirements covering the use of the town's public sewers.

SECTION 12. PROHIBITION OF CLEAR WATER CONNECTIONS

No person shall make a connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer.

SECTION 13. PROPER DESIGN AND CONSTRUCTION OF NEW SEWERS AND CONNECTIONS

The size, slope, alignment, materials of construction of all sanitary sewers and sewer connections and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the building and plumbing code or other applicable rules and regulations of the Town of Arriba and the State of Colorado. In the absence of code provision or in amplification thereof, the materials and procedures set forth in appropriate specifications of the latest edition of the A.S.T.M. and Water Environment Federation (formerly the Water Pollution Control Federation) Manual of Practice No. 9 shall apply.

(The Town of Arriba's "Regulation of Sewer Use" Ordinance contains additional requirements covering the proper design and construction of the town's sanitary sewers, building sewers and connections.)

SECTION 14. VALIDITY

All Ordinances or parts of Ordinances in conflict herewith are hereby repealed where they pertain to wastewater service. Nonconflicting existing Ordinances or parts of ordinances shall remain in force.

The invalidity of any section, clause, sentence or provision of this Ordinance shall not affect the validity of any other part of this ordinance which can be given effect without such invalid part or parts.

SECTION 15. ORDINANCE IN FORCE

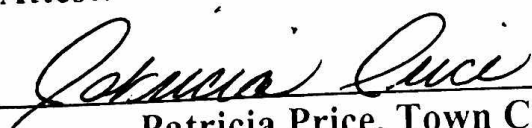
Sec. 1. Introduced, read, and set for public hearing on February 11th, 2002.

Sec. 2. This Ordinance shall be in full force and effect from and after its passage, approval, and recording as provided by law.

Adopted this 11th day of March, 2002.


M. Troy McCue, Mayor

Attest:


Patricia Price, Town Clerk

**APPENDIX A
SURCHARGE RATE SCHEDULE FOR
ABOVE NORMAL STRENGTH WASTES**

The Town of Arriba has determined that the average 5-day biochemical oxygen demand (BOD₅) daily loading for the average residential user is 220 mg/l. The Town of Arriba has established a surcharge rate for all non-residential users discharging wastes with BOD strengths greater than the average residential user. The surcharge will be sufficient to cover the costs of treating such users' above normal strength wastes. Such users will pay an additional service charge of twelve (12) cents per 1,000 gallons for each 25 mg/l over 220 mg/l of BOD.

**APPENDIX B
RATE SCHEDULE**

Residential users are considered to be one class of user and are assessed a charge of \$24.50 per month. Non-residential users with non-irrigation monthly potable water consumption no greater than the average residential user's non-irrigation potable water consumption of 4,600 gallons per month and with BOD no greater than the average residential user's strength of 220 mg/l will pay the same charge of \$24.50 per month as the average residential user.

Non-residential users with nonirrigation monthly water consumption greater than the average residential user non-irrigation monthly water consumption will pay a monthly charge proportionate to the ratio of the non-residential user's nonirrigation water usage to the 4,600 gallons per month of residential user nonirrigation water usage as set forth in the following attachment "Appendix D User Charge System Calculation for Sanitary Sewage System".

Any non-residential user determined to have a BOD greater than the average residential user's strength of 220 mg/l will pay a surcharge in accordance with the rates shown in the surcharge rate schedule.

**APPENDIX C
WASTEWATER TREATMENT FACILITIES REPLACEMENT FUND SCHEDULE**

A reserve fund, called the Wastewater Treatment Facilities Replacement Fund, established within the sewer fund as an interest-bearing account shall be funded by an annual deposit obtained from the sewer fund at the end of each fiscal year as budgeted and appropriated annually by the Board of Trustees.

**APPENDIX D
TOWN OF ARRIBA
USER CHARGE SYSTEM CALCULATION FOR
SANITARY SEWAGE SYSTEM**

A. Estimated Annual Costs for Sewer Enterprise Fund ¹⁾

Item No.	Activity	Cost
1.	Repairs, Maintenance and Supplies	\$ 1,000
2.	Salaries	15,000
3.	Utilities	4,500
4.	Discharge Permit Fee	257
5.	Lab Fees	3,000
6.	Chemicals	2,500
7.	Payroll Taxes	3,300
8.	Office and Miscellaneous	1,000
9.	Insurance	4,000
10.	Sewer Reserve Account	2,000
11.	Employee Retirement	924
12.	Bond Principal – USDA Rural Development	3,000
13.	Bond Interest – USDA Rural Development	2,150
14.	DOLA Loan Payment	3,210
	TOTAL	\$45,841

1) Based on current 2002 budget

B. Estimated Residential Flows

The Town of Arriba's historic records of total influent wastewater flows are derived from monthly discharge monitoring reports. No data exists with respect to individual user wastewater flows. Residential equivalent flows are based upon the Town of Arriba's potable water use records for nonirrigation months for the users connected to the wastewater system. A representative residential average water bill for nonirrigation months has been established that can be used for direct comparison to commercial nonirrigation monthly water consumption.

Average residential nonirrigation consumption = 4,600 gallons per month (gpm)

C. Estimated Flow from Other Users

A review was conducted of the town's sewer billing procedures for both its residential and various commercial accounts. The following list recaps the residential and commercial accounts in the town and how they are currently billed. Commercial accounts are generally billed in an amount equal to residential accounts for a standard user. Those accounts with greater usage are generally billed in an amount greater than that of a residential account with various charges established based upon perceived loadings on the system. The current rate structure establishes a single family equivalent being billed \$19.00 per month. Standard commercial accounts are generally charged \$19.00 per month, more in the case of larger users. The ratio developed in the following table correlates the \$19.00 monthly single family equivalent charge to that of the current monthly charges established for the various commercial accounts.

User	Current Equivalent Units Charged ³⁾
Residential	
Standard Residential	105 ¹⁾
Out-of-Town Residential	2 ²⁾
Commercial	
Leisure Pines ⁴⁾	11
CDOT Arriba Rest Area ⁵⁾	24.89
Tarado Mansion ⁶⁾	8
Arriba DJ's Motel ⁷⁾	6.24
Arriba's DJ Station	1
Total Units Billed	158.13

- 1) Standard in town residential units, includes minor commercial activities
- 2) One out-of-town residential unit
- 3) Equivalent basis is \$19.00 per month charged for a single family user
- 4) 10 unit apartment complex
- 5) CDOT rest area serving I-70
- 6) Out-of-town complex that includes mansion and two additional structures
- 7) 10 unit hotel

A review was conducted of the Town of Arriba's water and sewer billing records and procedures for users. The following table lists the current commercial users on the town's system that have non-irrigation water consumption exceeding that of average residential user.

Users with Non-Irrigation Water Consumption greater than a Single Family Equivalent
CDOT Arriba Rest Area
Leisure Pines
Arriba's DJ Station

Reviews of the water meter reading records in non-irrigation periods have validated that a majority of the commercial accounts consume potable water in a volume that makes them equivalent to or slightly less than a residential equivalent account. The accounts have been generally included in the 105 standard residential assessments. Thus to be equitable, those commercial accounts should be billed at the same rate as that of an equivalent residential unit. In the event the water usage was less than an equivalent residential unit, a minimum of one equivalent residential unit was maintained as the basis of the charge to provide for a minimum assessment. Such is necessary for the equitable distribution of the fixed costs associated with the town's operations. The following table contains those users on which a change in the equivalent residential assessment is recommended. The recommended units are based upon historical water consumption, excluding irrigation where applicable. Based upon the volume of water consumed by the Colorado Department of Transportation's (CDOT) rest area, discounted by their sprinkler system meter readings, and the projected strength of their wastewater in terms of BOD, this use is subject to a greater assessment based upon both hydraulic and organic loading factors.

User	Current Assessment	Recommended Assessment
Leisure Pines	11	8
CDOT Rest Area	24.89	22 ¹⁾
Tarado Mansion	8	6 ²⁾
Arriba's DJ Motel	6.24	1
Arriba's DJ Store	1	5.5
Total Units	51.13	42.5

- 1) Does not include organic surcharge
2) Double calculated rate based on being outside town limits

An individual commercial sewer rate for those users who consume more than the equivalent single family water consumption in the non-irrigation period is to be based upon dividing their monthly non-irrigation potable water metered consumption by the calculated residential users' non-irrigation potable water consumption (4,600 gallons) to determine the monthly single family equivalency ("R"). That figure is to then be multiplied by the monthly residential sewer rate to determine the sewer charge. For those units outside the town limits, the "R" is based on two times the flow rate determination. In the case of CDOT's rest area, the nonirrigation monthly consumption of 4,600 gallons determined for the community has been applied to the annual net effective consumption of the rest area covering both winter and summer conditions. Such yields an equivalency factory that can be utilized throughout the year as opposed to attempting to modify the sewer rate on a monthly basis. Actual water consumed within the complex has been determined based upon the meter reading from the town's water service and the on-site well meter reading, with the combination of those two figures discounted by the on-site irrigation meter reading as appropriate.

The above modifications are recommended on the basis of an equivalent residential unit consuming 4,600 gallons of non-irrigation potable water per month. The amount contributed to the wastewater system, excluding irrigation water, is reasonably proportionate between users. The equivalent basis of charges against the commercial users assumes their sewage strengths are comparable to that of residential contributions with the exception of the CDOT rest area. Thus, the final determinations for the rate structure are based upon volume for all users with the exception of the CDOT rest area. Units have been rounded off for simplicity of billing.

D. Determination of Residential Equivalents ("R") to be Used for Billing Purposes

User	Current "R"	Proposed "R"
Residential and minor commercial		
Standard Residential	105	105
Out of-Town Residential	2	2
Commercial		
Leisure Pines	11	8
CDOT Rest Area	24.89	22 ¹⁾
Tarado Mansion	8	6
Arriba's DJ Motel	6.24	1
Arriba's DJ Store	1	5.5
Total Units	158.13	147.5

- 1) Does not include organic (BOD) surcharge

E. Rate Schedule

Estimated Annual Costs:	\$ 45,841
Estimated Excess BOD Revenues (See Item F)	\$ (2,532) ¹⁾
Estimated Net Monthly Costs:	\$ 3,609.08 ²⁾
Monthly Residential Equivalent Cost:	\$ 24.47 ³⁾

- 1) CDOT BOD surcharge income
 2) Total cost divided by 12 months
 3) Monthly cost divided by 147.5 "R's"

A Monthly Residential Equivalent Rate of \$24.50 is recommended to cover projected expenditures. It provides for \$2,000 that can be budgeted into the reserve account or used for collection system or wastewater treatment facility maintenance. The increase will avoid depleting the reserve account for operations. The rates should be reviewed annually at the time of the budgeting process to determine if adjustments are required. The \$24.50 should be established currently as a minimum monthly rate per equivalent single family residential user. The following depicts the revenues that would be raised from the users based upon the recommended rate structure.

User	Equivalent "R"	Monthly "R" Rate	New Monthly Bill
Residential			
Standard Residential	105	24.50	\$2,572.50
Out-of-Town Residential	2	24.50	49.00
Commercial			
Leisure Pines	8	24.50	196.00
CDOT Rest Area			
a. Hydraulic	20	24.50	490.00
b. Organic		211.00	211.00
Tarado Mansion	6	24.50	147.00
Arriba's DJ Motel	1	24.50	24.50
Arriba's DJ Store	5.5	24.50	134.75
Total Units Billed	147.5		\$3,824.75

Maximum annual revenue based upon 147.5 active residential equivalent users

$$12 \text{ months} \times \$3,824.75/\text{mo.} = \$45,897.00$$

F. Determine BOD surcharge rates for above normal strength waste

Residential Equivalent monthly flow: 4,600 gpm potable water,
 sewer estimated at 4,140 gpm (90%)

Proposed Residential Equivalent Rate of \$24.50

Estimated allocation of costs as a percentage of treatment

Flow:	19%
BOD:	60%
Debt Reserve:	21%
Total	100%

Average wastewater strength based on treatment facility design

BOD: 220 mg/l or 1.83 lbs/1000 gal

Treatment cost breakdown

Flow: \$3.20/1000 gal

BOD: \$1.01/1000 gal

Debt: \$1.12/1000 gal

BOD: \$0.12 per 25 mg/l BOD₅ per 1000 gal

Set BOD Surcharge Rate at \$0.12 per 1000 gal per 25 mg/l BOD over 220 mg/l BOD

CDOT BOD₅ surcharge determination:

Average BOD₅ strength of wastes discharged from the CDOT Rest Area, based upon data contained in the Preliminary Engineering Report, are estimated at 660 mg/l versus a town discharge of 220 mg/l. The 25 mg/l multiplier required to take that strength of discharge into account is $(660-220) \div 25 = 17.6$. The annual volume discharged is estimated at approximately 1,200,456 gallons or 1,200 units (with a unit defined as 1,000 gallons). The resulting monthly BOD₅ assessment is $(\$0.12/\text{unit}) (17.6) (1,200 \text{ units}) \div 12 \text{ mos.} = \211.20 per month. Recommend use \$211 per month.
