December 28, 2012

Mr. Ben Wade
Office of Water Conservation & Drought Planning
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

TRI-COUNTY WATER
CONSERVANCY DISTRICT

Re: Final Report, Tri-County Water Conservancy District, Commercial/Industrial Water Audits and Water Conservation Information, CWCB Water Efficiency Grant

Dear Ben:

Attached is the final report for the subject implementation grant. Tri-County retained the services of the Brendle Group and Rebecca Nichols with RHN Water Resources Consultants to conduct several commercial/industrial (C/I) audits. Rebecca served as the project manager and the Brendel group performed the individual audits with help from Tri-County staff. The consultants followed up the audits with findings and recommendations to each of the Tri-County customers that were audited. These audits were well received by the customers and we received positive feedback from most.

We wish to thank the CWCB Board for the grant that facilitated this effort and the Staff for their assistance. If you have any questions, please do not hesitate to contact us.

Sincerely,

Mike Berry
General Manager

cc: Rebecca Nichols, RHN Water Resources Consultants (by email)
Becky Fedak, Brendle Group, Inc. (by email)

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Tri-County Water Conservancy District
Commercial – Industrial Water Audits
And
Water Conservation Information

Final Report

November 5, 2012

Background

Tri-County Water (TCW) is a small domestic water company located in Montrose, Colorado. The Company provides domestic treated water to areas in Montrose, Delta, and Ouray counties that are located outside of city and town domestic water providers. TCW received an approved Water Conservation Plan (WCP) in 2009. One of the goals in the WCP was to provide water audits to the highest water use customers in the Commercial- Industrial (C-I) sector. Five customers in the C-I sector were selected for water audits and four of the five agreed to participate in the program. Concurrently, a Water Efficiency Grant was sought from the Colorado Water Conservation Board to conduct the water audits.

Becky Fedak from the Brendle Group was selected to perform the water audits, Rebecca Nichols from RHN Water Resources Consultants was selected to act as the Project Manager for the grant, and Mark Starr from Tri-County Water managed the meter testing for the water audits. Mark Starr and Rebecca Nichols also participated in the site visits for the water audits.

Water Audits

Water audits were conducted for Ridgway State Park, Delta Correctional Center, and the Del- Mesa Farms during the second week of July in 2012. The water audit process consisted of review of the bi-monthly billings for each customer for the past three years, a site visit, a report from the Brendle Group summarizing the findings from the site visit and recommendations for water savings. Also, meter testing was conducted for each of the audited customers by TCW. As a final part of the water audit, telephone conferences were planned for each customer to answer any questions or concerns.

The site visit consisted of an assessment of the indoor and outdoor water use as well as the process water used for each customer. The water audit reports can be used to inform each customer of potential opportunities for water savings that can be implemented. Below is a detailed summary of the water audit reports produced by the Brendle Group.

Ridgway State Park

Ridgway State Park (Park) has three separate recreation areas: Dutch Charlie, established in 1991, Dallas Creek, established in 1992, and Pa-Co-Chu-Puk, established in 1995.

Dutch Charlie has two campgrounds with 187 campsites for Recreational Vehicles, tents, and yurt camping. Camper services at each campground include restrooms with wash basins, toilets, and pay showers and laundry facilities. Dutch Charlie also has a visitor center with restrooms and a large lawn and flower garden area. Separate from the visitor center is a swim beach with a large lawn area and outdoor showers. All lawn irrigation is done with potable water. Dutch Charlie is open from April through October with the visitor center and campground Loop A open during the winter months.

Dallas Creek is a day use only area with picnic sites, lake access, river fishing, and hiking trails. All irrigation at Dallas Creek is done with potable water. The recreation area is closed from November through March.

Pa-Co-Chu-Puk has one campground with 79 campsites for Recreational Vehicles and tent camping as well as a day use area with picnic sites. Camper services at the campground include restrooms with wash basins, toilets, and pay showers and laundry facilities. All irrigation at Pa-Co-Chu-Puk uses non-potable water from Ridgway Reservoir. The recreation area is closed from November through March.

Water Use

Water use at the Park was broken into two categories: indoor use and outdoor use.

The indoor water use included all fixtures in the restrooms and laundry facilities as well as the campsite yard hydrants. A fixture inventory was conducted at Dutch Charlie. The majority of the sinks inventoried had low flow aerators and a few standard flow aerators noted. Toilets, urinals and shower heads inventoried have a mixture of standard and low flow fixtures. The clothes washers inventoried in the camper services buildings consists of two top-load washers and one front-load washer. The outdoor water use includes irrigation for trees, flower gardens, and lawns.

Water use was assessed from the utility bills for the past three years for each of the seven water meters in the Park. The average bimonthly winter water use is 168,000 gallons and the average bimonthly summer water use is 2,858,000 gallons with an average of 23 gallons per visitor. Over 85% of water use in the Park occurs at the Dutch Charlie recreation area. Of note: Ridgway State Park has a water credit from the time the park was created and doesn't currently pay for water, however, the credit is projected to be used up in the next 4-7 years after which the Park will be paying for its water. The water saving measures outlined in the water audit report provided by the Brendle Group could extend the water credit for several more years. Also, the trend developed from the data provided by TCW and the Park show a general downward trend over the study period, however the number of gallons per visitor is trending upward. This may indicate an increase in undetected leaks in the distribution system within the park.

An inventory of fixtures was collected at Dutch Charlie and water use estimates were determined from the inventory for all of the recreational areas. Table 1 shows a detailed estimate of water use per fixture per recreation area. Table 2 summarizes the estimated water use by fixture per recreation area.

Table 1

Detailed Water Use by Fixture				
	Quantity	**Average Flow**	**Use per day**	**Total GPD**
Toilets		GPF	Flushes	
Dutch Charlie	38	3.5	20	2,691
Dallas Creek	7	3.5	9	212
Pa-Co-Chu-Puk	33	1.6	4	215
Urinals				
Dutch Charlie	12	3.0	28	1,000
Dallas Creek	4	1.0	15	181
Pa-Co-Chu-Puk	10	3.0	13	132
Wash Sinks		GPM	Minutes	
Dutch Charlie	51	2.2	13	556
Dallas Creek	17	2	2	72
Pa-Co-Chu-Puk	43	1.4	2	47
Showers				
Dutch Charlie	20	2.3	32	1,720
Dallas Creek	0			
Pa-Co-Chu-Puk	6	2.3	29	488
Clothes Washers		Gallons	Loads	
Dutch Charlie	6	22.7	15	383
Dallas Creek	0			
Pa-Co-Chu-Puk	3	22.7	8	191
Yard Hydrants		GPM	Minutes	
Dutch Charlie	10	12	21	2,479
Dallas Creek	0			
Pa-Co-Chu-Puk	2	12	4	98

gpf = gallons per flush
gpm = gallons per minute
GPD or gpd = gallons per day

Table 2

Detailed Indoor Water Use at Ridgway State Park Gallons per Day							
	Toilets	Urinals	Wash Sinks	Showers	Clothes Washers	Yard Hydrants	Total
Dutch Charlie	2,691	1000	556	1,720	383	2,479	8,829
Dallas Creek	212	181	72	0	0	0	465
Pa-Co-Chu-Puk	215	132	47	488	191	98	1,171

Findings and Recommendations

Fixture Upgrades

There were a number on fixtures inventoried at the Park. Most hand sinks had a flow rate of between 0.5 and 2.5 gpm and toilets and urinals gallons per flush (GPF) were determined by the year the fixture was fabricated. Since Dutch Charlie and Dallas Creek are older recreation areas, higher flow rates were determined for those sites (3.5 gpf for toilets, 3.0 gpf for urinals). Below is a detailed description of estimated water savings, costs savings based on $3.05 per thousand gallons, and payback periods. Also below is Table 3, a summary of water savings opportunities.

Wash Sinks and Showerheads: Replacing standard sink aerators with low flow aerators rated at 0.5 gpm and show heads rated at 1.5 gpm could reduce water use by 380,000 gallons and propane use by 860 gallons per year saving approximately $2,800.00 per year. The fixture upgrades were estimated at $1,300.00 installed and the payback was estimated at just over a year.

Toilets and Urinals: Replacing toilets and urinals with ultra low-flow fixtures could increase water savings by 1 million gallons and $3,100 per year, however, the cost of replacement, $600.00 per toilet/urinal, for an overall installed cost of $36,600.00 and would increase the payback period to 12 years. Since the initial cost of toilet/urinal replacement is high, it is recommended that toilet/urinals be replaced as needed. If replacement of fixtures is determined to be a high priority of the park personnel, a detailed inventory would be recommended in order to obtain a specific count.

Clothes Washers: Each camper service area has a laundry facility with two top loading washers and one high efficiency (HE) front loading washer. When the top-lading units are replaced, it is recommended that they be replaced with HE clothes washers as standard clothes washers use 27 gallons per load as opposed to HE clothes washers that use 14 gallons per load. If the 6 top-loading clothes washers are replace with HE washers it is estimated that there would be water savings of 44,000 gallons per year and 45 gallons of propane for a cost saving of $240.00 per year. It should be noted that the camper services with the laundry facilities are vending operations that have, by statute, full control of the operation and maintenance and replacement of the clothes washers.

Table 3

Ridgway State Park
Water Savings Opportunities

Fixture	Water Savings (kgal/yr)	Therm Savings (th/yr)	Annual Cost Savings	Capital Costs	Payback (years)
Toilets & Urinals	1,000		$ 3,100.00	$36,600.00	12
Wash Sinks	100	230	$ 800.00	$ 800.00	1
Showers	280	630	$ 2,000.00	$ 500.00	0.2
Total	1,380	860	$ 5,900.00	$37,900.00	

Leak Detection

Based on water use practices and patterns identified as well as assumptions and data provided by the Park and TCW, a water model was developed for each of the three use areas in the Park for both summer and winter uses. After determining water uses in the Park and comparing the uses with billing data, an estimate of unaccounted for water was developed. After completing the analysis, it appears that there is a large amount of undisclosed water use throughout the park. Since there is no sub metering for the actual use at the various recreation areas of the park, there is a lot of uncertainty where leaks might occur. Recommendations for locating the undisclosed water use include sub metering at the three different recreation areas as well as sub metering within Dutch Charlie. It was also recommended that the sub metering be divided between indoor and outdoor water use.

Outdoor Water Strategies

There is almost one acre of lawn irrigation at Dutch Charlie and all irrigation is done with treated water. Outdoor water use for irrigation can be reduced through improved irrigation equipment and practices and installation of low-water landscaping. It is recommended that the Park perform an irrigation audit. An irrigation audit would provide information on improved system efficiencies such as new sprinkler heads, irrigation timing and updated controls. Also recommended is the reduction of turf grass and replacement with low water use variety.

The Park has the right to use 100 acre-feet of reservoir water and currently uses and estimated 10 to 20 acre-feet per year. If the current irrigation system was converted from treated water to reservoir water, there could be an annual cost savings of $3,200.00 per year using approximately 40 acre-feet of water. There would be costs associated with the conversion such as pumping and filtering the reservoir water as well as installing and/or upgrading the piping systems. An estimated should be obtained from an irrigation specialist to determine potential costs.

Campground Yard Hydrants

The yard hydrants in the campgrounds have a flow rate of up to 12 gpm. It is recommended that the Park investigate flow-rate restriction devices that can be installed to reduce the potential for wasted water. Also, the hydrants that have frost free devices should be inspected periodically as the devices are susceptible to underground leakage.

Meter Testing

The two largest meters in the Park were tested for accuracy at a flow rate of 50 gallons per minute (GPM) and 100 GPM. Both meters tested at 100% accuracy.

Del Mesa Farms

Del Mesa Farms (aka Foster Farms) consists of 8 closed chicken rearing and egg production units that are located in rural Delta and Montrose counties. Six of the units house laying/breeding chickens and 2 of the units house pullet/replacement birds. Each farm has identical chicken houses, a farm office, and a dwelling unit of employees, except for the 2000 Road location which does not have a dwelling. Because all of the farms have the same layout and operation, only three farm locations were audited during the site visit. Farms inventoried include one pullet farm and one empty farm being prepared for the next flock. Data for the remaining farms was extrapolated from the data obtained from the farms audited.

Water Use

Water use can typically be broken into three categories: indoor use, outdoor use, and process water. Since the farms are located in rural Delta and Montrose counties, all irrigation water is provided by the Uncompahgre Valley Water Users irrigation water project and is outside of the TCW purview.

Indoor water use at each of the farms is at end use fixtures such as wash sinks, toilets and showers at the dwelling and at the office. All end fixtures in the offices inventoried were standard flow and it was estimated that fixtures in the dwellings were also standard fixtures. There are also evaporative coolers at each of the farm offices. In each of the dwellings, it was assumed that water use also include laundry facilities, kitchen use, and evaporative coolers. Because the dwellings were not inventoried, process water was the only water use analyzed qualitatively.

Process water uses at Del Mesa Farms include drinking water in the chicken houses and water used for the “foggers” in the evaporative cooling system. It was estimated the chickens consume 90% of the process water used. There is also a humidifier in the egg storage room at each laying farm. There are multiple drinking water apparatus in each of the chicken houses and average daily use ranges from 800 to 1,000 gallons per day for the laying houses. The pullet houses use increases as the chickens increase in size. Each of the chicken houses have “foggers” that are temperature controlled. Based on summer the difference between summer and winter water use, it was estimated that the evaporative cooling system uses 50,000 gallons per month per chicken house. Below is Table 4, a summary of water use at Del Mesa Farms.

Table 4

Detailed Water Use at Del Mesa Farms				
	Quantity per unit	**Average Flow**	**Uses/Day/ Fixture**	**Total GPD**
Toilets		GPF	Flushes	
Dwelling (7 units)	2	3.5	5	35
Farm Office (8 units)	2	2.0	3	105
Wash Sinks		GPM	Minutes	
Dwelling (7 units)	2	2.0	8	32
Farm Office (8 units)	2	2.0	1.6	32
Showers			Minutes	
Dwelling (7 units)	1	3.0	10	60
Farm Office (8 units)*	4	3.0	6	186
Chicken Houses				
Drinking Water (8 houses)	2			8,000
Fogger (8 houses)	1			1,667
Evaporative Coolers (1 each office & dwelling)	1			unnkown
Humidifer (6 units)	1			unknown

*showers are required before entering and upon leaving the chicken houses

Findings and Recommendations

Fixture Upgrades

A limited inventory of interior fixtures were taken during the site visit, however, those inventoried were standard flow fixtures. Replacing wash sink aerators with ones rated at 0.5 gpm and showerheads with models rated at 1.5 gpm would produce water and energy savings. Also, replacing standard toilets with low flow toilets (1.28 gpf) would also provide water savings. Based on a three year billing for the 8 chicken houses, the average unit cost calculated to $3.17 per 1,000 gallons. Installing low flow wash sinks and showerheads could reduce water use by 360,000 gallons and 750 therms annually producing cost saving of approximately $1,700.00 per year. The project cost was for fixture replacement was estimated at $1350.00 and with a payback of almost 2 years. Installing low flush toilets could reduce water use by 180,000 gallons producing cost saving of approximately $580.00 per year. The project cost was for fixture replacement was estimated at $13,000.00 and with a payback of almost 23 years. Since the capital costs for toilet replacement is high, it is recommended that toilet be replaced as needed. Below is Table 5, a summary of estimated water savings, costs and payback periods.

High Efficiency Appliances

There are clothes washers in each of the shower rooms to launder the contamination suits worn in the chicken houses. The replacement of top loading clothes washers with high efficiency (HE) rated clothes washers could produce water savings of 4,000 gallons per year with a cost savings of $20 per year. Since the replacement cost of HE clothes washers is considerably higher than regular top loading clothes washers, it is recommended that conversion to HE clothes washers be made at the time of replacement. Dishwashers and clothes washers in the employee houses were not considered since Del-Mesa Farms does not provide either.

Table 5

Del-Mesa Farms
Water Savings Opportunities

Fixture	Water Savings (kgal/yr)	Therm Savings (th/yr)	Annual Cost Savings	Capital Costs	Payback (years)
Toilets & Urinals	180		$ 580.00	$13,000.00	23
Wash Sinks	110	220	$ 500.00	$ 660.00	1.3
Showers	250	530	$ 1,200.00	$ 690.00	0.6
Total	540	750	$ 2,280.00	$14,350.00	

Leak Detection

Based on the water use practices, assumptions and data provided by the Del-Mesa farms, water use was calculated. Because chicken drinking water contributes to 90% of the water use on the farms and averages between 800-1,000 gallons per day per chicken house, estimates of leak detection was difficult to accurately estimate. In order to obtain more accurate data on water use, sub-meter installation is recommended for the fogger systems and the main farm meters at site of use.

Meter Testing

All of the water meters at the Del-Mesa farms were tested for accuracy at both the 50 gpm and the 100 gpm rate. Of the eight water meters tested, three tested low at either the 50 gpm or 100 gpm flow rate. Two of the meters were replaced due to the fact that they tested low at both flow rates and were measuring at only 60% of actual flow rate. The third meter was not replaced since it tested low at the 50 gpm flow rate but correct at the 100 gpm flow rate.

Delta Correctional Center

Delta Correctional Center (Center) is a low-security facility located in rural Delta county north of the Town of Delta. The facility has the capacity to house 480 inmates in 5 living units with 96 beds per unit. The living units have central restroom and showers with primarily standard flow water fixtures. In addition, the facility has a full-service commercial laundry facility and commercial kitchen that serves three meals per day. Heating and cooling are supplied by natural gas boilers, evaporative coolers, and small air conditioners. All outside watering is provided direct irrigation and a well. The average unit cost for water is $3.02 per 1,000 gallons for 2011and is consistent from month to month with slightly higher use in the summer months due to the use of evaporative coolers.

Water Use

Water use at the Center was broken into two categories: indoor use and outdoor use. Indoor water use includes all fixtures in the restrooms and kitchen. The majority of wash sinks, toilets and urinals, and showerheads inventoried were standard flow fixtures. There are a few lower flow toilets in the newer building. The Center's kitchen has standard flow rate spray rinse valves, a conveyor type dishwasher, a steam kettle, and a steam table for food service. The kitchen also has two ice machines and a third ice machine is located in the health clinic. The laundry facility has 7 commercial washing machines that operate 5 days per week. Interior water use was calculated to total 79%, Kitchen use, 7%, Laundry use, 10% and unidentified water which may be attributed to leaks, 4%. Table 6, below, summarizes the estimated water use at the Delta Correctional Center.

Table 6

Detailed Water Use Delta Correctional Center				
	Quantity per unit	**Average Flow**	**Uses per Day**	**Total GPD**
Toilets		GPF	Flushes	
Inmate Use:				
Shops & classrooms	18	3.5	30	1,260
Living units	15	3.5	96	5,040
Gym	3	3.5	72	756
Chapel	5	3.5	12	96
Staff Use:				
Admin old building	4	1.6	30	725
Admin new building	5	1.6	52	331
Urinals		GPF	Flushes	
Shops & classrooms	4	1.5	90	540
Living units	10	1.5	50	756
Gym	3	1.5	58	259
Chapel	4	1.0	9	36
Wash Sinks		GPM	Minutes	
Shops & classrooms	14	2.0	27.4	768
Shops & classrooms	8	2.2	48	845
Living units	10	2.0	192	3,840
Gym	3	2.0	54.4	326
Chapel	6	0.5	12.8	38
Staff Use:				
Admin old building	7	2.0	30	442
Admin new building	4	0.5	52	110
Kitchen	2	2.2	60	264
Spray Rinse Valve	2	2.0	120	480
Showers				
Shops & classrooms	5	3.5	106	1,848
Living units	20	3.5	180	12,600
Kitchen				
Dish Machine	1			525
Ice Machines	3			1,800
Utility Sink	1			270
Coffee Service	1			155
Steam Table	5			180
Commercial Laundry	7			3,752
Evaporative Coolers	22			370

Fixture Upgrades

There were a number on fixtures inventoried at the Delta Correctional Center including restroom fixtures and kitchen fixtures. The savings estimates are based on the inmate population of 480 and staff of population of 138. Table 7 is a summary of estimated water saving opportunities.

Wash Sinks: Most hand sinks had a flow rate of between 2.0 and 2.2 gpm except in the newer buildings which were rated at 0.5 gpm. Replacing standard sink aerators with low flow aerators rated at 0.5 gpm could reduce water use by 1,900,000 gallons and natural gas use by 3,900 therms per year saving approximately $8,000.00 per year. The fixture upgrades were estimated at $1,400.00 installed and the payback was estimated at just under 3 months.

Toilets: Replacing toilets and urinals with ultra low-flow fixtures could increase water savings by 2.2 million gallons and $6,200.00 per year, however, the cost of replacement, $600.00 per toilet/urinal, for an overall installed cost of $44,600.00 and would increase the payback period to 6 years for the toilets and 12 years for the urinals. Since the initial cost of toilet/urinal replacement is high, it is recommended that toilet/urinals be replaced as needed.

Showerheads: Retrofitting or replacing the showerheads at the Center would be more costly since the showerheads are mounted from the backside of the wall. The water savings for the low water use showerheads may produce water savings of 2.3 million gallons and 4,700 therms per year with a cost savings of $9,600.00. The capital cost of replacement was estimated at $6,300.00 with a payback period of 6 months. The cost estimate does not include repairs associated with the replacements.

Ice Machines: The ice making machines at the Center are presently water cooled and use between 100 and 180 gallons (or more) of water per 100 pounds of ice produced. By replacing the current ice machines with air-cooled ice machines, the water savings were estimated to total 200,000 gallons per year with a cost savings of $600.00. Replacing the ice machine condenser with a new air-cooled condenser would cost about $1,000.00 with a payback period of 2 years. Replacing the entire ice machine with a new air-cooled machine would cost approximately $4,000.00 with a payback of 7 years.

Clothes Washers: The Center is considering replacing the current laundry system with a ozone laundry system. The new system would produce water and energy savings as well as reduction in cleaning chemicals. Ozone laundry systems can be used with cold water and reduces required rinsing thereby saving water use up to 50%. An ozone system is estimated to produce water savings of 290,000 gallons of water and 7,700 therms with a cost savings of $9,000.00 a year. Replacing the 7 commercial clothes washers with a ozone system has a projected capital cost of $29,000.00 with a payback period of 3 years.

High Efficiency (HE) Appliances and Equipment: Replacement of common equipment such as dish machines and food steamers with new HE equipment could produce further water savings. Replacing a new dishwashing machine would save over 60 gallons per hour over the

current unit. Over a year of washing dishes three times per day, water saving could amount to 131,000 gallons with a cost savings of $400.00.

Table 7

Delta Correctional Center
Water Savings Opportunities

Fixture/Equipment	Water Savings (kgal/yr)	Therm Savings (th/yr)	Annual Cost Savings	Capital Costs	Payback (years)
Toilets	1,800		$ 5,100.00	$31,000.00	6
Urinals	390		$ 1,100.00	$13,000.00	12
Wash Sinks	1,900	3,900	$ 8,000.00	$ 1,400.00	2
Showers	2,300	4,700	$ 9,600.00	$ 6,300.00	6
Air-Cooled Ice Machines	200		$ 600.00	$ 1,000.00	2
Ozone Laundry System	290	7,700	$ 9,000.00	$29,000.00	3
Total	6,880	16,300	$ 33,400.00	$81,700.00	

Meter Testing

The master meter at the Delta Correctional Center was tested for accuracy at the 50 gpm rate and at the 100 gpm rate. Both tests produce accuracy at 98%.

Nationwide Communities

Water Conservation Information

Nationwide Communities, a mobile home park, has 185 units with 175 currently in use. All irrigation for lawns, gardens, and parks is provided by the Uncompahgre Valley Water Users irrigation water project and is outside of the TCW purview. Water conservation information was distributed to the mobile home park residents in the August and September monthly billing. The August distribution contained water conservation information in English and the September distribution contained water conservation information in English and in Spanish.

The water information sheet distributed to the residents contained basic information on average household water use, water conservation fixture information, and tips for conserving water on a daily basis. The residents were also given the opportunity to have home water audits performed by TCW. Appendix A contains the water conservation information.

Summary

Water audits were performed for three of the highest water users in the Commercial-Industrial sector in Tri-County Water. Below is a summary for each of the water customers audited.

Ridgway State Park: The water audit conducted at Ridgway State Park resulted in information on the water use and potential water savings recommendations. The recommendation made for the highest water saving potential was leak detection and irrigation upgrades. A follow-up telephone conference was conducted with Kristin Copeland, the Park Manager. Kristin was very pleased with the report provided by the Brendle Group and asked questions concerning other grants available to implement the sub metering and irrigation projects.

Del-Mesa Farms: The water audit conducted at the Del-Mesa Farms was received well by Dave Brennan, Complex Manager, however, since 90% of the water used was for chicken consumption, there was not much potential for water savings. The meter testing conducted by TCW indicated that several of the meters were over recording by 20%-50% and were replaced. A follow-up phone call was made by Rebecca Nichols. Mr. Brennan had no comments about the overall water audit or report.

Delta Correctional Center: In a pre-audit phone conversation with Bill Hunt at the corrections facility, Mr. Hunt indicated that one of the long-term goals for the Department of Corrections was to reduce their water use. Mr. Hunt was very enthusiastic about the water audit; however, he was not available for a follow-up phone conference. Most notable in this audit was the potential for water savings through the replacement of fixtures and appliances. It will be interesting to see if the water audits affect the water use over time.

Nationwide Communities: The results of the water saving information will only be realized through reduced water use over time. To date, there have been no requests for in home water audits from any of the residents at Nationwide Communities.

APPENDIX A

Water Conservation Information

Water Facts

Did you know that:

- 27% of all water used in homes is from toilet flushing, and
- 28% of all water used in homes is from clothes washers, and
- 16% of all water used in homes is from kitchen and bathroom faucets?
- Evaporative coolers use about 3 gallons per hour of use and average 66 gallons per day during the cooling season.
- The average indoor water use without water conservation is 69.3 gallons per day per person!

Tips for Water Conservation

Fixture Upgrades:

- Replacement of a toilet manufactured after 1994, 3.5 gallons per flush, with a new low-flow 1.28 gallons per flush will save about 10,000 gallon of water a year!

- A normal faucet without an aerator will use about 21 gallons per day per household. Adding an aerator to a kitchen and bathroom faucet will provide water savings of about 5,000 gallons per year!

- High Efficiency (HE) clothes washing machines use 27 gallons per load as opposed to conventional clothes washing machine that use 39-43 gallons per load. HE clothes washing machines typically provide automatic water level adjustment which ensures water efficiency.

Additional Tips for Water Conservation

1. Turn off the faucet when brushing teeth or shaving.
2. Wash only full loads of clothes if you don't have water level adjustment or HE clothes washers.
3. Fix a Leak! Check for dripping faucets, running toilets, and leaky evaporative coolers.
4. Water lawns and gardens in the evening or early morning to reduce evaporation.
5. Sweep sidewalks and driveways instead of hosing them off.

If you would like **Tri-County Water** to conduct a home water audit, contact us at 249-3369 to make an appointment.

Hechos de Agua

Usted sabia:

- El 27% de todo el agua utilizada in los hogares es de indoor.
- 28% del agua utilizada en el hogar es de lavadora de ropa.
- El 16% de toda el agua utilizada en los hogares es de grifos de la cocina y los baños.
- Enfriador evapóratele uso unas horas por galones y el promedio de 66 galones por día durante la temporada de refrigeración.
- El consume medio de agua de interior sin la conservación del agua es 69.3 galones por día por persona.

Consejos Para la Conservación

Accesorio de Actualizaciones:

- Reemplazo de un inodoro fabricado después de 1994, 3.5 galones de agua por descarga, con el nuevo flujo bajo 1.28 galones por descarga ahorrara aproximadamente 10,000 galones de agua por anos.

- Un grifo normal sin un aireador va a utilizar cerca de 21 galones por día por familia. Adición de un aireador de un grifo de cocina y baños supondrá un ahorro de agua de unos 5,000 galones al ano.

- Alta eficiencia (HE) lavadora de ropa utilizan 27 galones por carga en lugar de ropa convencionales lavadora que uso 39-43 galones pro ropa load. HE lavadoras suelen proporcionar agua ajuste automatice del nivel que garantica la eficiencia del agua.

Consejos Adicionales para la Conservación del Agua

1. Cerrar el grifo al lavares los dientes o afeitares.
2. Lavar solo cargas completas de ropas si usted no tiene ajuste de nivel da agua o HE lavadoras de ropa.
3. Arreglar una fuga! Comprobar si hay goteo grifo, corriendo indoor y con goteras enfriador evaporativo.
4. Regar el césped y jardines en la noche o temprano por la mañana para reducir la evaporación.
5. Barr alas acercas y caminos de unidad en lugar de la manguera ellos.

Si gustaría que **Tri-CountyWater** llevar a cabo una auditoria de qgua en el hogar nos contacto con nosotros al (970) 249-3369 para hacer una cita.