

### **Carbon Canal Company Supplemental Field Policies and Procedures**

*Our goal is to do our best to deliver the irrigation water that each irrigator is entitled to use.*

#### **Before Water can be Ordered**

At the beginning of each irrigation season all headgates will be inspected, closed and locked. Prior to using irrigation water these requirements must be met:

1. All Carbon Canal Company (Company), PRWUA and Lateral assessments, gate assessments and late fees owed by an irrigator must be paid in full before water can be ordered.
2. Unobstructed vehicular access to all headgates and flow measuring devices must be provided at all times.
3. Leaking headgates must be repaired or replaced at the user's expense.
4. Operating wheel must be installed and locked on headgate. / pumps must be locked
5. Turnout's flow measuring device must be in proper repair in accordance with the manufacturer and Company specifications, and be capable of accurately measuring water.

#### **Requesting Irrigation Water**

During the irrigation season there will be at least two employees to help meet your irrigation needs. Brad Timothy is our full-time Water Master and will be available Monday – Thursday. A part-time Ditch Rider will be available Friday - Sunday. When ordering water please call the Water Master at 435-650-5411, between 9:00 am and 12:00 pm, Monday - Friday.

Orders need to be made at least 48 hours in advance of having water turned on or off or changing the flow rate.

If an irrigator is already using water previously ordered and needs to move that flow to a different headgate they only need to call 24 hours prior to the needed change. On Saturdays and Sundays calls to move water will also be accepted between 8:00 a.m. – 9:00 a.m.

When ordering water, try to be as specific as possible and give the following information:

1. The name of water owner or designated contact person
2. A phone number at which you can be reached
3. The headgate number at which you want water delivered
4. The date on which you will start irrigating after 5:00 a.m.
5. The date on which you will stop irrigating, before 5:00 a.m.
6. The desired flow rate you want in cubic feet per second (CFS)  
(1 cubic foot per second (CFS) = 449 gallons per minute (GPM))

#### **Water Measurement**

All water delivered to irrigators must be measured. The measuring devices (Parshall Flumes or Meters) are required to measure flow. Irrigators are charged based on their ordered flow rate or the amount of water flowing through the measuring device, whichever is greater.

If an irrigator on a lateral that serves more than one irrigator is using more water than what was ordered for that day, the overage must be immediately accounted for or the entire lateral is at risk of being turned off. The irrigator(s) on the lateral that is/are using more water than what they ordered will be charged based on the flow running through their individual meter(s).

**\*Parshall flumes are one approved way to measure flow. Irrigators using parshall flumes are charged based on the amount of water ordered or upon the flow rate running through the parshall flume, whichever is greater.**

**Headgates will be set and locked by the Water Master or ditch rider. If a headgate silts up or becomes blocked it is the irrigators' responsibility to maintain and clear that headgate.**

For open ditch irrigation the installation and maintenance of a Parshall flume is required. Flumes shall be installed as close to the canal road as possible, upstream of any ditch splitting. If the flume cannot be installed before the ditch splits then additional flumes are required for each subsequent ditch. Flumes shall be installed in ditches that have enough grade drop to allow for free flow conditions. If the ditch does not have enough grade drop to allow for free flow conditions, installation of a meter is required. Irrigators shall keep ditches clear of debris to allow water to flow uninhibited above and below the flume.

A straight section of ditch is required upstream from the flume. This section shall be a minimum of ten (10) times the throat width of the flume and be free of debris or obstructions that may interrupt the consistent flow of water approaching the flume.

All flumes shall be inspected yearly by the Water Master and must meet Company specifications prior to any irrigating. Any flume that is not level from inlet to outlet or from side to side shall be readjusted by the irrigator. Any flume that has rusted through, caved in, or is damaged must be replaced by the irrigator(s) at his/her cost. All new installations or reinstallations must be inspected by the Water Master.

Staff gauges shall be installed in flumes at their proper engineered location and be easy to read. For a 3" flume the hash marks on the staff gauge must be upstream of the throat 12 - 1/4", for a 6" flume 16 - 5/16" and for a 9" flume 23 - 1/8". To ensure accurate reading of the staff gauge all numbers and markings from the top to the bottom need to be clear of moss, rust and debris. Each staff gauge shall be labeled showing the size, type, and marking increments. All flumes shall measure irrigation water in cubic feet per second (CFS). The recalibration of turnout flumes will not be permitted and the installed staff gauge must read the actual flow passing through the flume. All vegetation on the bank of the ditch shall be cleared and maintained by the irrigator to permit the inspection and reading of staff gauges. Staff gauges are available at the Canal Company office during regular business hours.

The Company urges irrigators who wish to use a parshall flume to purchase and utilize a 3-inch, 6-inch or 9-inch Parshall flume. New Parshall flumes are available at: Guymon's Machining, 235 North Center, Cleveland, Utah (435)653-2325. Any flume purchased from another manufacturer must be approved by the Board of Directors prior to installation.

**\*Meters are used to measure and totalize flow. Irrigators using meters are charged based on the amount of water ordered by them, or in situations where more water was used than what was ordered, irrigators will be charged for the amount shown on their meter totalizers.**

**If a lateral meter indicates that the water flowing through the meter exceeds the amount of water ordered or if an individual irrigator has more water running through his/her meter than was ordered they will be charged based on the flow of water (CFS) running through their meter at that time. \*See Irrigation Laterals section for more information.**

Irrigation meters may be installed in piped turnouts. Upstream from any meter, a sedimentation basin or pond should be installed to remove any silt that could damage the meter. A screen should also be installed upstream that is small enough to filter any debris that could interfere with the meter's operation. This screen and sediment control structures shall be maintained and cleared by the irrigator on a regular basis.

All meters shall be readable at all times. If a meters readout is under water, the water must be diverted away from the meter box or a meter register extension must be installed so that the meter readout is always above water. If a meter is located inside a confined space it must be readable from outside the confined space.

Meters shall be installed so they can be submerged in the pipeline. This can be accomplished by raising the pipe downstream of the meter or installing elbow fittings. If the top of the pipeline is less than four (4) feet deep, a drain is recommended so that it can be flushed and drained to prevent freezing.

Meters shall be sized properly to read minimum and maximum flows requested by irrigators. They shall have a needle or digital display that displays flow in gallons per minute (GPM) and displays the total in acre feet. If there is a reset feature on the digital readout for the total water reading the Water Master, Ditch Rider, or authorized Company volunteer must

have the password information and must be present if the meter needs to be reset. The minimum flow rate delivered to any irrigator shall not be less than their meter will read and record as specified by the manufacturer and field verified by the Water Master.

All meters shall be installed to meet the straight pipe requirements of the meter manufacturer. A flow straightener shall be installed upstream of the meter for installations that do not permit enough pipe length to meet the straight pipe requirements for that meter. The purpose of the flow straightener is to reshape irregular flow into a smooth stream prior to the water flowing through the meter.

If any meter is not registering an accurate flow the Water Master shall notify the irrigator and the turnout shall be closed and locked until the meter is repaired or replaced. Without the meter working there is no other way to measure the use of water from that turnout.

The Water Master, Ditch Rider, authorized lateral board members or volunteers, working in the interest of the Company, shall have access to all meters and digital readouts at all times. For underground meter installations a meter box must be installed and be large enough to provide access to the meter for reading. The meter box must have a lid to protect the meter and keep it clean. All above ground digital meter readouts must be installed in a protected electrical type box that can be locked. To avoid vandalism or tampering this lock should be a combination lock with authorized access by the Water Master and Ditch Rider.

### **Canal Bank Pumps**

Any unauthorized pumping directly from the canal is prohibited. Anyone desirous of using a pump for irrigation purposes, provided that all requirements are met, must file an application with the Company for Board review. A copy of the application form is available at the Company office. The Company reserves the right to approve or reject any applications.

The minimum requirements for approval will include:

1. Ownership or possession of water rights adequate to meet irrigation demand;
  2. Installation and maintenance of a lockable turnout (headgate);
  3. Installation and maintenance of a meter;
  4. Unobstructed vehicular access to the turnout and meter
  5. Foot bridge access if measuring device and lockable valve are not on the road side of the canal.
  6. Placement of hoses or piping on the canal road is prohibited.
- Pump protection shall be the responsibility of each irrigator.

### **Irrigation Laterals**

The Company will only read the main flow measuring device at the canal road for each lateral turnout. The reading of any lateral meters or flumes beyond that point is the responsibility of the lateral members. It is up to the irrigators on each lateral to get organized, to work together and to make sure that that each irrigator on that lateral receives his/her fair share of water.

For water measurement, each lateral with multiple connections can only be treated as one customer of the Company. It is virtually impossible for the Company to ensure that each irrigator on a lateral receives his/her fair share of water. That is why it is up to the irrigators on each lateral to monitor and police themselves.

Company jurisdiction ends at all turnout flow measuring devices. Any ditch related issues beyond that point is considered to be a private matter that needs to be resolved by the irrigators and property owners themselves.

Each lateral must have at least one individual who is employed by the lateral or has volunteered and is authorized by the members of the lateral to be the Lateral Water Master. Duties of the Lateral Water Master include reading meters, locating excessive water use and ensuring that the lateral is operated and maintained properly. If the lateral group requests assistance from the Company to complete any of these tasks it will be assessed for Company expenses by mutual agreement of the parties.

Each meter on an irrigation lateral will be read by Carbon Canal Company at the beginning and end of the reservoir water season at the expense of the users on the lateral. Laterals can choose to have Carbon Canal Co. read their meters each month at their expense.

When a main lateral is not working after five (5) days individual meters will be read. If the totalizer is not working correctly, each user will be monitored until the main meter can be replaced or repaired. The maximum time to replace or repair a main lateral meter will be two weeks, at the discretion of the Water master. The Board will review each issue on a case by case basis.

\*Agreements between irrigators served by one lateral, concerning use and measurement of irrigation water, shall be considered by the Company's Board. The Company reserves the right to accept or reject any agreements presented.

### **Canal Crossings**

Placement of culverts installation of permanent bridges, temporary foot bridges and piping over the canal and/or installation of utility lines beneath the canal must receive prior written approval from the Company's Board.

### **Canal Access**

All roadways along the entire length of the canal shall be cleared of debris to facilitate the operation and maintenance of the canal. Company will be frequently monitoring all head gates and flow measuring devices along the canal and needs to have easy unobstructed driving access to them. Roadways shall be cleared back far enough to permit travel by Company trucks and heavy equipment used for repairs and maintenance. A minimum width for the roadway of sixteen (16) feet is recommended. There will be no exceptions regarding the clearing and continued maintenance of the canal road right of way.

The Company's Board of Directors, Ditch Riders, agents and other employees or volunteers working in the interest of the Company shall have access to all canal roads for the purpose of maintaining the canal, inspecting and operating headgates and flow measuring devices.

### **Fences / Gates**

At all fence crossings a metal hinged gate fourteen (14) feet or wider is required across the top of the canal road. If the gate needs to be locked, a Company lock shall be installed in the chain, next to the gate owner's lock. Gates shall be easy to open and swing away from the canal. Owners/irrigators who install or maintain any non-hinged wire type gates / barricades that do not meet Company specifications and which remain on the canal road and are closed will not receive their irrigation water.

If there is a fence between the canal road and a flow measuring device the property owner shall install a metal gate on hinges to permit easy access.

To facilitate canal cleaning and head gate access, no fences are allowed to parallel the canal between the canal road and the bank of the canal. If a parallel fence is required it shall not be installed closer than thirty (30) feet of the water's edge on either side of the canal or in any part of the canal.

Canal road gate owners who choose to have their gate(s) shut will be assessed a monthly fee. If gates are open from 7 am to 3 pm, during the irrigation season of March 1 thru November 30, no charges will be assessed. If gates are shut when the Water Master or Ditch Rider travels along the canal in an afterhour's inspection, no assessment will be charged. The monthly assessment for a closed gate is \$30 per gate.

When a fence crosses over the top of the canal, no permanent fencing is allowed inside the canal's banks. To keep livestock from passing under the permanent fence a swinging fence may be installed at the bottom of the permanent fence but cannot obstruct the flow of the canal or collect debris floating down the canal. During the winter months when the canal is empty, a livestock panel(s) may be temporarily placed inside the canal to prevent escape of animals. The panel(s) needs to be removed by the property owner before the canal is filled in the spring.

## **Excavations**

Prior approval from the Company or the Water Master is required before any excavation work will be permitted within the canal right-of-way.

Any excavations made within the canal right of way shall be made by a licensed Utah contractor who maintains general commercial liability insurance, with coverage limits of not less than \$500,000. Written verification of licensure and insurance coverage acceptable to the Company must be provided to the Company prior to commencement of work.

If excavation work off of the canal right-of-way is required on private property, for irrigation purposes, the property owners may perform the work so long as it meets Company specifications and is inspected by the Water Master prior to backfilling. This includes installations of measuring devices or other related irrigation devices.

## **Headgate Installation and Maintenance**

Headgates will be set, locked and unlocked by the Water Master or Ditch Rider. If a headgate silts up or gets blocked it is the irrigator's responsibility to maintain and clear that headgate prior to water delivery.

Any cost associated with the repair of an existing headgate or installation of a new headgate is the responsibility of the irrigator(s) using that headgate. If multiple irrigators use the same headgate they should share in those costs.

When a leaking head gate has been identified a written notice shall be given to the irrigator(s) using that headgate. The irrigator(s) then needs to contact the Water Master to inform him whether they want to continue using the headgate. If so, the irrigator(s) must then hire a contractor to make the necessary repairs at their expense. If no action has been taken by the irrigator(s) to contact the Company within 48 hours of the notice, an earth dam will be placed in front of the headgate by the Company, to stop the leak. If the irrigator(s) elects to repair the leaking headgate at a later date, they will be required to pay the cost associated with removing the dam along with any other expenses involved in making the headgate operational.

## **Headgates**

All new head gates shall be of the Waterman or Fresno brand. Any other brands must be approved by the board of directors prior to installation. Flat back headgates are not accepted unless they are mounted against a concrete wall. The spigot back type will be approved for new installation. The spigot end of the headgate shall extend into a PVC pipe (IPS 160 PSI) and sealed water tight with a gasket fitting.

Regulated headgates are used frequently and require a cleared and direct path to the measuring device. On any new construction all measuring devices below a regulated headgate shall be within 50 feet of the headgate or as otherwise approved by the Company.

Headgates shall be supported and anchored in a vertical position. All supports shall be anchored into the bank of the canal and extend out to the head gate for easy access to the operating wheel. The standing area provided to operate the wheel needs to be a minimum of eighteen (18) inches from side to side and at least 6" below the operating wheel.

On new construction a concrete wall is preferred to anchor the headgate.

Each headgate is required to have an attached operating wheel to open and close the valve. Headgates shall be locked in the closed position when not in use. The operating wheel shall not be removed from the headgate at any time without approval of the Water Master. If the operating wheel is removed without approval, the violator will be assessed a tampering fee and will pay for any damages. These fees must be paid prior to the violator receiving irrigation water through any headgate along the canal.

## **Headgate Removal**

Old abandoned headgates along the canal shall be removed. These headgates tend to rust away and allow water leakage from the canal. Prior to removal, a headgate removal request must be submitted to the Company to document the removal. The Company shall arrange and pay for all costs associated to remove abandoned headgates.

**Damage to Headgates and Measuring Devices**

If you see anyone tampering with or damaging a headgate, Parshall flume or meter, please notify the Carbon County Sheriff's Office and the Water Master or Ditch Rider. Anyone damaging canal system infrastructure is subject to criminal prosecution under Utah law.

**Roadway Piping**

All turnout pipes shall extend a minimum of two (2) feet past the toe slope of the road. If a pipe needs to be extended it shall be done by the Company, but the irrigators using that turnout will be required to pay the cost of the installation.

**Shrinkage**

The Carbon Canal is over twenty seven (27) miles long and water shrinkage needs to be considered when determining what percentage of water to deliver for each water share.

Several factors contribute to a higher shrinkage rate. Evaporation and seepage are things we cannot control without piping the entire canal. On the other hand, leaking headgates, unauthorized pumping and other authorized use are things we can focus on to reduce shrinkage. Any time you become aware of any of these conditions or of any safety concerns notify the Water Master and the Board of Directors who will then determine the best way to correct this problem so that shrinkage can be reduced.

**Volunteer Work and Donations**

The Company is a nonprofit organization. Board members are not paid for their time and efforts. There are many improvement projects and tasks that need to be completed on an ongoing basis to keep the canal in operation. If anyone would like to donate or volunteer their time to help out contact the Water Master and he can coordinate the work efforts.

*Policy No. 2016-1 approved by Board of Directors on February 15, 2016*

*Policy No. 2014-1 approved by Board of Directors on February 20, 2014*

*Previous Policy No. 2013-1 approved by Board of Directors on March 26, 2013*