



# Specialized Systems

## *Backwash Reclaim for Water Conservation*

### **Application:**

GreensandPlus Filtration

Backwash Reclaim

### **System Design:**

3000 GPM

(6) 12ft Diameter Skid  
Mounted Vessels with  
PLC Controls

Date: 2020

**Additional documentation:**  
Support reading material link  
to H&T web site

[www.Hungerfordterry.com](http://www.Hungerfordterry.com)

***Earth's most precious resource, water, has long been taken for granted as being unlimited. As populations are expanding into areas where water is scarce, the need to conserve water is becoming paramount.***

Backwash Reclaim systems can easily recycle 85% of the amount of water required to backwash a media filter.

A economical and low maintenance reclaim system allows water that has already been treated to be returned to the influent lines in a filtration system rather than dumping to sewer or settling basin.

### **Application Details:**

Due to increasing capacity requirements, a local town in Nevada needed to find new sources of drinking water.

The consulting engineer reached out to H&T for assistance in providing a new GreensandPlus Filtration system because of our excellent working relationship and performance on previous projects.

Due to the arid location the city also wanted a high efficiency system that would economically reclaim the valuable backwash waste water.



(6) 12ft GreensandPlus Filter System  
(construction photo)



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### System Requirements:

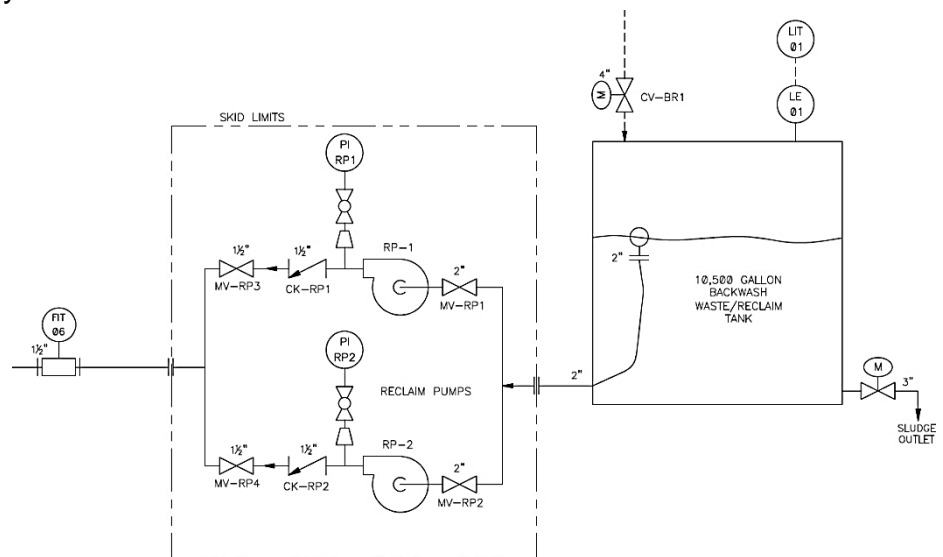
Due to the size of the filters require, surface area of the filter bed and water temperature, the backwash flow rate would be approximately 1300gpm for a system total of 78,000gal per backwash cycle. The reclaim system will allow over 66,000 gallons to be recycled on every backwash cycle. With 24hr runtimes this reclaim system will save over 24 million gallons annually from being sent to the sewer.

The equipment required for a backwash reclaim system comprises of a properly sized holding tank with internal collection piping for both the reclaim connection and sludge removal as well as tank level transmitter.

Additionally the backwash reclaim pump with redundancy, associated valves and piping can be all skid mounted for easy installation.

Accurate ratio control of reclaim flow to raw water flow is important and will be part of the PLC system.

Backwash Waste storage tank should be sized with consideration to backwash volume, reclaim flow rate and time required to blend the supernatant back into the raw water at the inlet of the filtration system.



Typical BW Reclaim P&ID



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Backwash Waste storage tanks can be built into the concrete foundation of a building below the filter level, or if job site space will allow, an above ground bolt together storage tanks can be assembled on site with properly engineered footings as shown below.



Since 1909 Hungerford & Terry Inc. sets industry standards in engineering, design and manufacture of innovative and efficient water treatment systems.

Systems include removal of Iron, Manganese, Arsenic, and Radium; High-efficiency / low-waste Nitrate removal; PFOS/PFAS, Color removal, Chrome-6 removal, Perchlorate removal, Degasifiers Towers, Condensate Polishers and complete Demineralizers for Boiler Feedwater for the Energy sector.