

Drinking Water State Revolving Fund Green Project Reserve

- Final -



Fairview Water District Drinking Water Project SRF Loan #DW1404 (pop. 725) \$1,900,000

Final Green Project Reserve Justification

Categorical GPR

INSTALLS PRESSURE SUSTAINING VALVE (Water Efficiency). Categorical GPR per 2.2-12:
Installing water efficient devices. (\$63,000).

PRESSURE SUSTAINING VALVE¹

Summary

- A Pressure Sustaining Valve will be installed to maintain a constant, preset backpressure in the Cub River Canyon system.
- Loan amount = \$1,900,000
- GPR-eligible = CLA-VAL PSV (1)
- Green portion of loan = 3.3% (\$63,000) (installed)



Background

- The Cub River Canyon system appears to have been designed for water transmission purposes only. Water flows from two spring boxes through nearly 8 miles of 6-inch diameter transmission pipeline, to two concrete storage tanks located on a foothill bench overlooking the district's lower valley service area.
- There are thirty eight (38), 3/4-inch metered connections established along the 8-mile, 6 inch pipeline. The pipeline is always under dynamic flow conditions as spring flow changes and customer demands fluctuate; therefore the hydraulic grade line is in endless fluctuation with service line pressures constantly varying according to spring inflow and customer demand.
- The system is hydraulically unstable in that varying demands and spring inflows result in wide swings in customer pressures throughout the day. Often customers connected at pipeline high points suffer from very low pressures.

Results

- Installing a pressure-sustaining valve (PSV) is the most important feature for controlling the pressure fluctuations on the Cub River Canyon system.
- A pressure-sustaining valve will be placed just upstream of the concrete tanks and set to hold a 40-psi dynamic (and static) pressure at the highest elevated service tap with the hydraulic gradeline to be set an elevation of 4890 feet.
- Installing a PSV will stabilize the hydraulic grade line (HGL) and will pass up to 1,000 gpm. The PSV also has the ability to reduce the spring water flow to zero if needed, to maintain the valve's HGL elevation setting.
- When demand in the Cub River system diminishes (or increases), the valve opens (or closes) and allows the spring water to flow into the concrete storage tanks for use in the lower system.



PSV: Pressure Sustaining Valve:

- Manufacturer: CLA-VAL
- Quantity (1): 4-inch, CLA-VAL Pressure Sustaining Valve equipped to stabilize the HGL at el. 4890

Conclusion

- Pressure sustaining valve (PSV) installation = \$63,000
- The PSV is categorically GPR-eligible as it is a water efficient device.
- **GRP Costs Identified**: 1 PSV installed = **Total = \$63,000** (installed)
- **GPR Justification**: The PSV is Categorically GPR eligible (Water Efficiency) per Section 2.2-12²: *Installing water efficient devices...*

¹ Cub River Canyon Facility Plan, Fairview Water District, by Project Engineering Consultants, April 2012

² Attachment 2. April 21, 2011 EPA Guidance for Determining Project Eligibility