City of Salmon FY12 Wastewater Facility Project

SRF #WW1204

$3,500,000

Final Business Case GPR Documentation

INSTALLS SCADA FOR REMOTE MONITORING/CONTROL (Energy Efficiency). Business Case GPR per 3.5-8: SCADA systems can be justified based on substantial energy savings ($75,000).
**SCADA CONTROL TECHNOLOGY**

**Summary**

- Energy efficiency results from the remote electronic sensing and control of the treatment plant and lift stations.
- Total SRF loan amount = $3,500,000
- Estimated energy efficiency (green) portion of loan = 2% ($75,000)
- Estimated annual savings $11,600 per year.

**Background/Results**

- The SCADA system is part of the project both at the plant and for the lift station.
- **FILTER FEED PUMPS and BACKWASH PUMPS:** The feed pumps to the effluent filter and backwash pumps will be controlled through a PLC (programmable logic controller which is part of the SCADA system) that is both tied to a level sensor and VFD’s (variable frequency drives) on the pumps. The SCADA PLC on the feed pumps and VFDs will significantly reduce feed pump cycling, thereby greatly reducing energy consumption.
- **PLANT:** Through a computer based Graphical User Interface (GUI) program the plant’s processes will be monitored and observed remotely. The SCADA GUI will save energy through reduced travel to and from the plant.

**Energy Efficiency Improvements**

- **FEED PUMPS:** For the feed pumps it is estimated that a 10% reduction of power use over a typical float / on-off system. Utilizing 12 HP feed pumps and 5 HP backwash pumps, the savings would be approximately $2,000 per year.
- **PLANT:** Remote SCADA control saves labor and travel costs = 1 person one trip per day at 6 miles per day = $8,750 per year in labor costs; travel cost @ $0.51 per mile = $850 per year = total saving of $9,600/yr.

**Conclusion**

- Total SCADA savings would be around $11,600 per year in energy and labor costs = payback of 6.5 years, therefore SCADA system costs are GPR-eligible.
- **GPR Costs**: SCADA = Equipment & Installation: $57,000
  SCADA Installation: $18,000
  $75,000

- **GPR Justification:** SCADA system costs are GPR-eligible by a Business Case per 3.5-8: SCADA systems can be justified based on substantial energy savings.

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1 December 2012 Keller Engineers - IDEQ
2 September, 2014 Keller Engineers - IDEQ