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Water Re-Use Task Force

Moscow, Idaho

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System Overview:
The City of Moscow, Idaho Water Reclamation & Reuse Facility (WRRF) operates a Class B reclaimed water facility, under the NPDES Permit No. ID-002149-1.

The City of Moscow, in cooperation with the University of Idaho (U of I), delivers approximately 87 million gallons of treated effluent to the U of I per summer for reuse as irrigation water per year. The WRRF disinfection system is comprised of a gaseous chlorination contact chamber, with a minimum of 30 minutes of detention time, and gaseous sulfur dioxide as a dechlorinating agent. Chlorinated effluent water is diverted, prior to dechlorinating, to the University's 500,000 gallon holding tank for additional chlorination and subsequent transfer throughout the U of I campus for irrigation.

The City of Moscow WRRF uses the Class B effluent for landscape irrigation, site maintenance activities, and high pressure water spray for two headworks perforated plate screens and compact washer cleaning. Reclaimed effluent water is also used for Hydro-jet conveyance main cleaning throughout the City's conveyance network. In 2017, this practice applied 355,300 gallons of reclaimed water.

The City of Moscow is exploring ways to expand the use of WRRF effluent at City owned and operated Parks for irrigation. Purple piping underground utility lines are being installed as opportunities arise for future use.

City of Moscow to University of Idaho Reuse Delivery Statistics

Reuse Class	Year	Quantity Delivered (Million Gallons)	Purpose of Reuse
B	2013	83.6	Landscape Irrigation
B	2014	81.5	Landscape Irrigation
B	2015	100.1	Landscape Irrigation
B	2016	83.2	Landscape Irrigation
B	2017	85.4	Landscape Irrigation

Method of Treatment:
The City of Moscow WRRF consists of two preliminary perforated plate screens and grit removal, Biological Nutrient Removal Activate Sludge Treatment, tertiary continuous backwash upflow sand filtration phosphorus polishing filters, a reaeration basin, and a chlorine contact chamber. Class A Biosolids are produced and delivered to a local facility for composting.

City of Moscow WRRF effluent is discharged in accordance with the facility's NPDES permit into Paradise Creek at the west end of the City.

Origination Date & System History:

- Agreement for the City to provide treated effluent to the University of Idaho in June 1977
- University application of treated effluent as irrigation water starts in 1978
- Biological Nutrient Removal Facility constructed in 2001, replaced a Trickling Filter Wastewater Treatment Plant
- Tertiary Sand Filter installed in 2009

Key Regulatory Hurdles and/or Issues:

<u>Seasonal Issues</u>

- WRRF effluent Temperature limitations
- Inadequate storage facilities for additional reuse capability

<u>Other Issues</u>

- Lack of purple piping network system for 100% reuse
- Current WRRF does not meet 5 log removal for fecal coliform as required for Class A Effluent.