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**WILDERNESS MOUNTAIN WATER SERVICE
ANNUAL REPORT ON OPERATIONS
26 NOVEMBER 2010**

System Overview

The Wilderness Mountain Water Service (WMWS) is a small water system consisting of 83 lots, 65 of which are developed, approximately 22 km southwest of Victoria in the Capital Regional District (CRD) Juan de Fuca Electoral Area. The system was developed circa 1983 and was operated by a private company before converting to a service of the CRD in 2009.

The source of water for the WMWS is Wilfred Reservoir, a small lake that was created by the construction of two dams. The system also includes three pumphouses (of which two are in use), and two concrete storage tanks with a combined capacity of 270 cubic metres (60,000 Imperial Gallons). A submersible pump within Wilfred Reservoir pumps water from the source, at +/- 52 Imperial Gallons per minute (lgpm), into the distribution system and to the storage tanks through a network of 150 mm and 100 mm PVC watermains. Chlorine is injected at the source for primary and residual disinfection. Although most or all customer connections are metered, the meters have not been read regularly for several years and their accuracy is unknown.

Drinking Water Quality

The water provided by the WMWS is safe to drink. With the exception of a short period in July 2009, when a Boil Water Advisory was issued, all sample results since January 2009 have been within the limits of both the *Guidelines for Canadian Drinking Water Quality* and the *BC Drinking Water Protection Regulation*. In July 2009, total coliform bacteria were found in a number of samples collected from the first customer, the distribution system sampling locations and the balancing reservoirs. These positive total coliform results (some of which contained more than 10 total coliform bacteria per 100 mL) caused the Wilderness Mountain Drinking Water System to be out of compliance with the *Drinking Water Protection Regulation* and prompted a precautionary short-term Boil Water Advisory. No *E. coli* bacteria were found in any of the treated water samples collected in the distribution system. The attached *2009 Annual Overview of Wilderness Mountain's Drinking Water Quality* provides further information.

New treatment requirements established in 2008 by the VIHA pursuant to the *DWPA*, called the *4.3.2.1 Policy*, cannot be consistently achieved in the Wilderness Mountain water system. The *4.3.2.1 Policy* requires that for a surface water source (i.e. a lake, river or stream), the treatment process must:

- Achieve a four-log (99.99%) reduction in viruses from source water
- Achieve a three-log (99.9%) reduction in *Giardia* cysts and *Cryptosporidium* oocysts
- Include a minimum of two stages of treatment, typically filtration and disinfection
- Achieve a maximum turbidity of 1.0 NTU in treated water

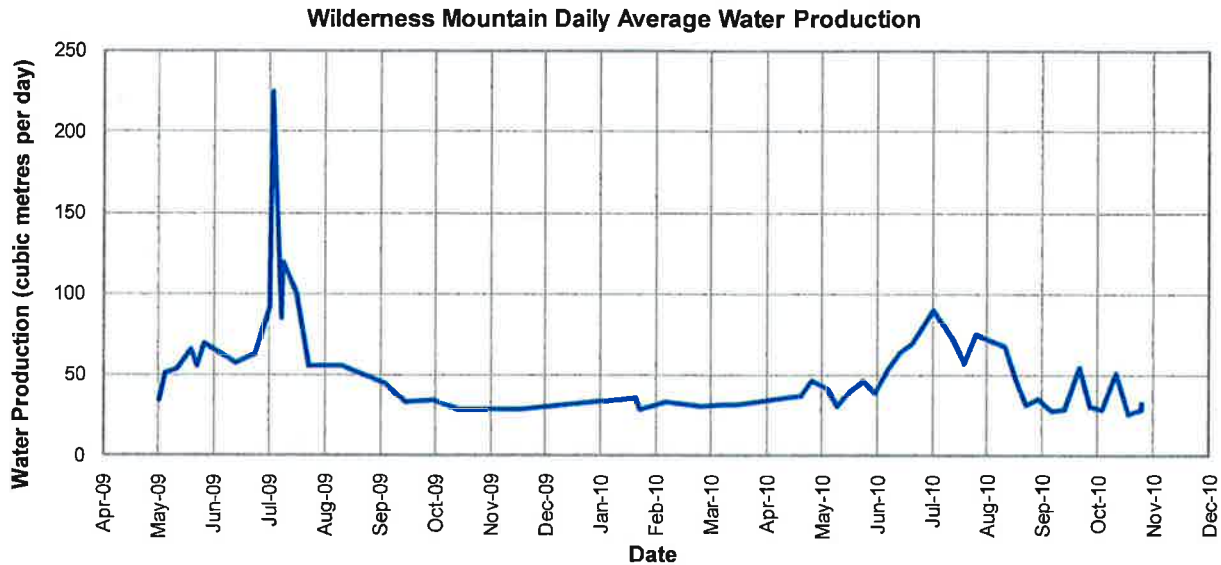
The objective of treatment upgrades planned for 2011 is to achieve compliance with legislated requirements for drinking water treatment, including the *4.3.2.1 Policy*.

Water Supply and Demand

In 2009, approximately 16,000 cubic metres of water was supplied to the Wilderness Mountain water service area, or about 240 cubic metres per household. Daily average water production since May 2009 is shown in

Figure 1. The peak flow rate in July 2009 resulted from a watermain break that was repaired the same day it occurred.

Figure 1. Daily Average Water Production



Water System Upgrade Project

As a condition of conversion of the Wilderness Mountain water system to a local service of the Capital Regional District (CRD) in 2008, the CRD required that the infrastructure be upgraded to comply with legislated requirements. The original project plan, based on similar CRD projects in the Gulf Islands, was to construct a new water treatment plant based on a Dissolved Air Flotation (DAF) process. At the time that the service was converted, the cost to construct a new DAF water treatment plant and to improve mixing in the storage tanks was estimated to be \$708,000. In 2005, the CRD was awarded a provincial infrastructure grant under the Community Water Improvement Program, funding two thirds of the project cost up to a maximum grant of \$472,000. Approval to borrow \$281,000 for the community share of the project was obtained by petition of the residents at the same time the service was converted.

Recent costs to construct DAF water treatment plants for CRD water service areas on Salt Spring Island were in the range of \$1.2 to \$1.4 million. Although those plants are somewhat larger than would be required for Wilderness Mountain, it is now apparent that construction of a new DAF plant for Wilderness Mountain would cost substantially more than the available budget. Such a plant may also commit the service area to unnecessarily high operation and maintenance costs, should it prove to be more technically complex than required to meet legislated objectives for treatment of drinking water from the Wilfred Lake source.

A water quality sampling and analysis program conducted by CRD staff in the past year will enable a more rigorous approach to treatment process design than was previously possible. In September 2010 the Wilderness Mountain Water Service Commission authorized staff to design and construct immediate treatment improvements to the Wilfred Reservoir pumphouse; and to hire a consultant to evaluate options for further water treatment upgrades based on source water quality data, and to recommend a treatment upgrade plan that meets the project objectives.

Staff are currently working on design and procurement of materials for the immediate improvements at the Wilfred Reservoir pump station. Proposals have been received from four interested consulting firms for the options analysis and pre-design assignment, and it is anticipated that the work will be completed in December.

Operations

The WMWS has operated reliably and cost-effectively in the past year. Maintenance completed in 2010 to date includes cleaning of the balancing storage tanks near Ambience Place, and flushing of all the watermains in the system.

Financial Report

Attached is a copy of the *Statement of Financial Activities* as prepared by CRD Finance and Corporate Services for the year 2009 for the Wilderness Mountain Water Service. The statement provides an overview of the revenues and expenditures for the year. Revenues are generated primarily through parcel taxes and user fees, and small amounts for interest on savings and miscellaneous revenue such as late payment charges.

Expenditures include all costs to administer the service. General government services are charges levied by CRD Corporate Services for the financial processing of the budget and collection of fees and charges. Other includes all expenses needed for the operation of the service including all CRD labour costs for day to day operations, CRD service personnel hours performing maintenance and repairs, chemicals, electricity, water testing costs, maintenance parts allowances for electrical and mechanical equipment, rental or equipment as necessary and allowances for technical and staff support to the committee, and for the payment of debt.

The difference between revenue and expense is added to any surplus or deficit carried forward from the prior year. If there is a significant surplus, funds may be transferred to a reserve or capital project account. The surplus or deficit balance after any transfers is carried forward to the following year. Regional District services are not permitted to plan to carry forward a deficit, so a deficit in a given year usually requires a tax or fee increase in the following year to recover costs and prevent a subsequent deficit.

The 2009 revenue of \$104,460 included \$51,131 parcel tax, \$38,489 user fees and \$14,472 water sales. The total expenditures were \$106,189 for operation and administration of the service, including all operating expenses as well as the one-time cost of \$44,856 to convert the service to the CRD. The WMWS currently carries no debt.

The difference between revenue and expenditures in 2009 amounted to a net expense of \$1,728 that was carried forward as a deficit against 2010 revenue. The current balance in the reserve fund is \$11,113.



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CS:ls
Attachment: 1

**CAPITAL REGIONAL DISTRICT
STATEMENT OF REVENUE AND EXPENDITURE
WILDERNESS MOUNTAIN LOCAL SERVICE AREA
FOR THE TWLEVE MONTHS ENDED DECEMBER 31, 2009**

J. Hull

	YTD			ANNUAL BUDGET
	ACTUAL	BUDGET	BUDGET	
REVENUE:				
Water Sales	\$ 14,472	\$ 13,608	\$ 13,608	
User charge	38,489	36,191	36,191	
Revenue from Parcel tax	51,131	51,131	51,131	
Miscellaneous	368	-	-	
TOTAL	\$ 104,460	\$ 100,930	\$ 100,930	
EXPENDITURE:				
Operational & Maintenance	\$ 53,867	\$ 49,900	\$ 49,900	
Service Establishing costs	44,856	25,000	25,000	
Finance and Administration	3,959	4,600	4,600	
Corporate insurance	3,507	4,490	4,490	
Contingency	-	2,000	2,000	
Debt Servicing costs	-	12,130	12,130	
Transfer to MFA Debt Reserve Fund	-	2,810	2,810	
TOTAL	\$ 106,189	\$ 100,930	\$ 100,930	
SURPLUS/(DEFICIT)	\$ (1,728) *	\$ -	\$ -	

Notes;

*-2009 deficit was carried forward into the 2010 budget