

**WASHINGTON DEPARTMENT OF ECOLOGY  
ENVIRONMENTAL ASSESSMENT PROGRAM  
FRESHWATER MONITORING UNIT  
STREAM DISCHARGE TECHNICAL NOTES  
MANUAL STAGE HEIGHT STATION**

**STATION ID:** 01S070  
**STATION NAME:** Squalicum Cr. at West Street  
**WATER YEAR:** 2009  
**AUTHOR:** Chuck Springer

**Introduction**

Watershed Description

The Squalicum Creek watershed is one of the largest independent drainages in Whatcom County. It includes most of northern Bellingham, beginning at Squalicum and Toad lakes and flows west to Bellingham Bay. Squalicum Creek is 9.7 miles long and the watershed drains 22 square miles of land. The main land uses in the Squalicum Creek watershed are residential, forestry, commercial, agricultural, light industrial, and some mining. Squalicum Creek supports populations of coho, Chinook, and chum salmon, as well as steelhead and cutthroat trout.

Gage Location

This gage is co-located with a City of Bellingham continuous stream gage upstream of the corner of West Street and Squalicum Parkway, at river mile 0.7.

Table 1.

Drainage Area (square miles)	22.9
Latitude (degrees, minutes, seconds)	48° 45' 58" N
Longitude (degrees, minutes, seconds)	122° 29' 56" W
Primary Gage Index Type	Staff Gage
Secondary Gage Index Type	Tape Down

**Error Analysis**

Overall Rating Error Percentage	24.5
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**Rating Table(s)**

Table 2. Rating Table Summary

Rating Table No.	6	7	N/A
Period of Ratings	10/1/08 – 1/8/09	1/8/09 – 9/30/09	
Range of Ratings (cfs)	0 – 265	0 – 265	
No. of Defining Measurements	15	7	
Rating Error (%)	15.9	27.7	

Rating Table No.	N/A	N/A	N/A
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.	N/A	N/A	N/A
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

**Narrative**

One rating shift occurred during water year 2009: a full-range fill caused by substantial sedimentation at the box culvert downstream of the gage.

### Discrete Flow Record

Table 3. Discrete Flow Record Summary

Number of Discrete Stage Readings	20	
Maximum Observed Stage (feet) and Date	2.60	5/7/09
Maximum Predicted Discharge (cfs) and Date	153	12/29/08
Minimum Observed Stage (feet) and Date	0.89	10/30/08
Minimum Predicted Discharge (cfs) and Date	0.8	9/22/09
Range of Stage (feet) and Discharge (cfs)	1.71	152.2

### Narrative

One of the discrete discharge measurements made during water year 2009 was qualified as a questionable estimate. Freezing conditions during this measurement resulted in ice accumulating on the ADCP transducer head. Only one valid transect was obtained before the ADCP failed.

### Modeled Discharge

Table 4. Model Summary

Model Type (Slope conveyance, other, none)	None
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

### Surveys

Table 5. Survey Type and Date (station, cross section, longitudinal)

Type	Date
None	

## **Activities Completed**

This station was permanently removed at the end of water year 2009 due to budget cuts.