

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 46B060
STATION NAME: Roaring Creek nr Mouth
WATER YEAR: 2008
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Introduction

Watershed Description

Station 46B060, Roaring Creek, drains 24.75 square miles; and the basin elevation ranges from 1,180 ft. to 3,870 ft. The mean basin slope is 46 percent. The area is 32% forest canopy, and the rest is open grass land with steep hill sides. Land is mainly forested with some small farm and orchards. The stream channel is gravel to bedrock in places.

Gage Location

The gage is located up the Entiat River Road to Roaring Creek Road about eight miles. Turn left onto Roaring Creek Road and drive about two miles. The station is on the left-hand side. PGI is staff gage.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	25
Latitude (degrees, minutes, seconds)	47 41 09 N
Longitude (degrees, minutes, seconds)	120 20 35 W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	5.5
Median Annual Discharge (cfs)	3.0
Maximum Daily Mean Discharge (cfs)	47
Minimum Daily Mean Discharge (cfs)	0.5
Maximum Instantaneous Discharge (cfs)	64
Minimum Instantaneous Discharge (cfs)	0.4
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	0.72
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	10
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0
Number of Un-Reported Days	21
Number of Days Qualified as Estimates	122
Number of Modeled Days	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Table 2 Discussion (Discharge Statistics)

One hundred five days were estimated because drift error (difference between observed and recorded stage) exceeded the 20 percent of predicted flow threshold. The remaining estimated days followed periods of icing in which stage was not confirmed. Twenty-one days were ice-impacted and were unreported

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	6
Potential Weighted Rating Error (% of discharge)	17
Total Potential Error (% of discharge)	33

Table 3 Discussion (Error Analysis)

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Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	0.84
Maximum Recorded Stage (feet)	2.30
Range of Recorded Stage (feet)	1.46

Table 4 Discussion (Stage Record)

Maximum stage was recorded on January 27. The lowest stage was recorded on the final day of the water year, September 30.

Table 5. Rating Table Summary

Rating Table No.	8		
Period of Ratings	05-14-07 to 01-06-09		
Range of Ratings (cfs)	0.33 to 109		
No. of Defining Measurements	21		
Rating Error (%)	17		

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

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

Table 5 Discussion (Rating Tables)

Rating 8 was used for the whole water year. At no time throughout the year did flow exceed the upper or lower limits of the rating curve.

Table 6. Model Summary

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

Table 6 Discussion (Modeled Data)

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Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date

Table 7 Discussion (Surveys)

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Activities Completed

Routine station maintenance and discharge measurement was conducted at six-week intervals.
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