

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

**STATION ID:** 32B100  
**STATION NAME:** Touchet River at Bolles Road  
**WATER YEAR:** WY 2010  
**AUTHOR:** Mitch Wallace

**Introduction**

Watershed Description

The Touchet River, the largest tributary of the Walla Walla River, flows out of the Blue Mountains in southeast Washington. Spring Chinook, steelhead, and bull trout are present within the watershed. Land use is primarily agricultural, consisting of dryland crops and irrigated farming in the lower portions.

Gage Location

This gage is located on the right bank, downstream of the Highway 125 Bridge, 3.5 miles west of the town of Waitsburg. It is located at river mile 40.4.

Table 1.

Drainage Area (square miles)	357 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 16' 28" N
Longitude (degrees, minutes, seconds)	118° 13' 16" W

**Discharge**

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	173
Median Annual Discharge (cfs)	136
Maximum Daily Mean Discharge (cfs)	923
Minimum Daily Mean Discharge (cfs)	39
Maximum Instantaneous Discharge (cfs)	1100
Minimum Instantaneous Discharge (cfs)	34
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	335
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	47
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	30

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

**Narrative**

Nine discharge measurements were taken throughout the water year, ranging from 46 to 565 cfs.

**Error Analysis**

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	3.5
Weighted Rating Error (% of discharge)	8.5
Total Potential Error (% of discharge)	12.0

**Rating Table(s)**

Table 4. Rating Table Summary

Rating Table No.	301	401	6
Period of Ratings	03/29/09 to 1/5/10	1/6/10 to 6/2/10	6/3/10 to 7/5/10
Range of Ratings (cfs)	25 to 7780	24 to 7780	122 to 7780
No. of Defining Measurements	15	16	10
Rating Error (%)	10.4	7.7	8.3

Rating Table No.	402		
Period of Ratings	7/6/10 to 12/18/10		
Range of Ratings (cfs)	24 to 7780		
No. of Defining Measurements	16		
Rating Error (%)	7.7		

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

## Narrative

The water year began under rating #3. Rating #401 was a result of channel scour caused by seasonal run-off. The shift to rating #6 was due to additional channel scour caused by another snowmelt event. The increase in vegetation growth leading to channel fill resulted in the shift to rating #402.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.89
Maximum Recorded Stage (feet)	5.15
Range of Recorded Stage (feet)	2.26
Number of Un-Reported Days	5
Number of Days Qualified as Estimates	9
Number of Days Qualified as Unreliable Estimates	0

## Narrative

Un-reported days were due to ice-impacted periods. Days in which the mean daily flow difference between edited and un-edited data was greater than 20% were qualified as estimates. In addition, the data following the ice-impacted period without a verifiable manual staff reading were also qualified as estimates.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	6.0 to 9.48
Range of Modeled Discharge (cfs)	1800 to 7780
Valid Period for Model	WY 2010
Model Confidence	2.13 %

## Surveys

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

Type	Date
n/a	n/a

## Activities Completed

No significant activities were completed, other than routine maintenance tasks.