

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

STATION ID: 32F060
STATION NAME: Dry Creek near Mouth
WATER YEAR: WY 2007
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Introduction

Watershed Description

Dry Creek is a tributary of the Walla Walla River. The confluence is just south of the town of Lowden. Dry Creek's watershed is mainly used for dryland wheat agriculture, with only sparse forest in the headwaters. It drains the lower slopes of the Blue Mountains southeast of the town of Dixie.

Gage Location

Dry Creek near Mouth is located off of Highway 12 near the town of Lowden. The staff gage is located on the right bank, underneath the highway bridge.

Table 1.

Drainage Area (square miles)	244 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 03' 46" N
Longitude (degrees, minutes, seconds)	118° 34' 31" W
Primary Gage Index Type	Staff
Secondary Gage Index Type	Tapedown from bridge

Error Analysis

Overall Rating Error Percentage	10.5
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Rating Table(s)

Table 2. Rating Table Summary

Rating Table No.	301	401	201
Period of Ratings	12/30/05 to 10/4/07	10/5/07 to 4/21/07	4/22/07 to 7/14/07
Range of Ratings (cfs)	0.09 to 113	0.43 to 174	0.25 to 174
No. of Defining Measurements	7	5	6
Rating Error (%)	11.1	9.8	11.2

Rating Table No.	6		
Period of Ratings	7/15/07 to 10/24/07		
Range of Ratings (cfs)	0.10 to 174		
No. of Defining Measurements	5		
Rating Error (%)	11.4		

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

Narrative

Water Year 2007 began in a phased between Ratings 301 and 401. Rating 401 took full effect in mid-March 2007. This was the end of a seven-month period without a discharge measurement. The lack of discharge measurements made it difficult to determine a hydrologic reason for the rating shift. In late March, the rating shifted to #201, due to channel fill caused by a spring precipitation event. Rating #6 went into effect in late August, due to vegetation die-off resulting in channel scour.

High variability exists at this site, due to significant instream vegetation and silt build-up.

Discrete Flow Record

Table 3. Discrete Flow Record Summary

Number of Discrete Stage Readings	44	
Maximum Observed Stage (feet) and Date	8.36	1/4/07
Maximum Predicted Discharge (cfs) and Date	n/a	1/4/07
Minimum Observed Stage (feet) and Date	3.98	5/25/07
Minimum Predicted Discharge (cfs) and Date	0.20*	5/25/07
Range of Stage (feet) and Discharge (cfs)	4.98	n/a

Narrative

Three discharge measurements were taken, ranging from 0.40 to 16 cfs. Due to the lack of flow measurements a large portion of the collected data has been qualified as an estimate. The maximum predicted discharge was greater than 2x the highest measured flow. Therefore, it is not being reported.

Four readings were calculated based on a regression between staff gage and a secondary gage index, in this case a tapedown from the bridge. At high flows this was needed, because the staff was underwater. At low flows, the bottom the staff gage is buried in silt and was not readable.

*Unknown flow, less than reported figure.

Modeled Discharge

Table 4. Model Summary

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

Surveys

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

Type	Date
n/a	n/a

Activities Completed

Debris removal from staff gage occurred throughout the year.