

Project Name:	Prentiss
Stream Name:	Little Mud Brook
Bridge Name:	Mud Brook Bridge
Route No.	171
Analysis by:	AWMann

PIN:	16742.00
Town:	Prentiss TWP
Bridge No.	5707
USGS Quad:	
Date:	9/16/2009

### Peak Flow Calculations by USGS Regression Equations (Hodgkins, 1999)

*Enter data in blue cells only!*

	km <sup>2</sup>	mi <sup>2</sup>	ac
A	10.64	4.108	2629.2
W	0.59	0.227	145.3
P <sub>c</sub>	573568	5039284	
County	Penobscot S		
pptA	39.5		
SG	0.00		
A (km <sup>2</sup> )	10.64		
W (%)	5.53		

*Enter data in [mi<sup>2</sup>]*

Watershed Area  
Wetlands area (by NWI)

watershed centroid (E, N; UTM 19N; meters)  
choose county from drop-down menu  
mean annual precipitation (inches; by look-up)  
sand & gravel aquifer as decimal fraction of watershed A

**Worksheet prepared by:**

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Conf Lvl

Ret Pd T (yr)	Peak Flow Estimate		
	Lower	Q <sub>T</sub> (m <sup>3</sup> /s)	Upper
1.1		2.56	
2	4.04	5.69	8.02
5	6.64	9.40	13.33
10	8.57	12.28	17.58
25	11.19	16.28	23.68
50	13.25	19.51	28.75
100	15.42	23.01	34.35
500	20.68	31.95	49.37

Q <sub>T</sub> (ft <sup>3</sup> /s)
90.3
201.0
332.1
433.4
574.9
689.0
812.6
1128.3

**Reference:**

Hodgkins, G., 1999.  
Estimating the magnitude of peak flows for streams  
in Maine for selected recurrence intervals  
*Water-Resources Investigations Report 99-4008*  
US Geological Survey, Augusta, Maine

$$Q_T = b \times A^a \times 10^{-wW}$$