

SESSIONAL PAPER No. 25-1

*Monthly Discharge of Moyie River at Kingsgate, B.C., for 1916.*

(Drainage area, 970 square miles)

| MONTH.     | DISCHARGE IN SECOND-FEET |          |       |                  | RUN-OFF.                          |                     |
|------------|--------------------------|----------|-------|------------------|-----------------------------------|---------------------|
|            | Maximum.                 | Minimum. | Mean. | Per square Mile. | Depth in inches on Drainage Area. | Total in Acre-feet. |
| April      | 2,340                    | 1,210    | 1,770 | 9.10             | 3.43                              | 109,960             |
| May        | 5,360                    | 2,110    | 3,030 | 3.03             | 3.17                              | 137,800             |
| June       | 10,600                   | 2,840    | 5,460 | 9.99             | 10.70                             | 324,900             |
| July       | 3,940                    | 500      | 1,530 | 3.72             | 9.14                              | 93,910              |
| August     | 472                      | 170      | 290   | 0.51             | 0.99                              | 17,930              |
| September  | 393                      | 130      | 177   | 0.91             | 0.35                              | 10,330              |
| October    | 130                      | 90       | 103   | 0.19             | 0.22                              | 3,700               |
| November   | 130                      | 130      | 133   | 0.39             | 0.91                              | 3,400               |
| December   | 110                      | 110      | 110   | 0.19             | 0.22                              | 3,760               |
| The period | 10,800                   | 95       | 1,408 | 2.47             | 25.13                             | 794,200             |

## ST. MARY'S RIVER (3050).

*Location.*—This station is located at the highway bridge near Wycliffe, 10 miles above the mouth and 14 miles from Cranbrook.

*Records Available.*—April 1 to December 31, 1914; April 1 to September 30, 1915; April 1 to September 30, 1916.

*Drainage Area.*—The drainage area of St. Mary's river above Wycliffe is one thousand, one hundred and ten square miles.

*Gauge.*—A vertical staff gauge nailed to the pier of the traffic bridge near Wycliffe is read daily by Mr. E. L. Staples.

*Channel.*—The channel above and below the gauge is smooth, straight and uniform. The control is a very pronounced riffle and seems permanent.

*Discharge Measurements.*—The 1916 rating curve is based on 17 measurements, 4 of which were made during 1916.

*Winter Flow.*—The St. Mary's river is affected by severe ice conditions from November to March.

*Accuracy.*—Between 400 and 16,000 cubic feet per second—"A." Between 16,000 and 38,000 cubic feet per second—"D."

*Discharge Measurements of St. Mary's River near Wycliffe, for 1916.*

| Date.    | Engineer.               | Meter No. | Width. | Area of Section. | Mean Velocity. | Gauge Height. | Discharge.       |
|----------|-------------------------|-----------|--------|------------------|----------------|---------------|------------------|
|          |                         |           | Feet.  | Sq. ft.          | Ft. per sec.   | Feet.         | Sec.-ft.         |
| March 4  | Richardson and Dempster | 1,327     | 209    | 292              | 2.38           | 1ce           | 972 <sup>1</sup> |
| July 23  | T. R. Patterson         | 1,329     | 169    | 973              | 4.21           | 4.84          | 4,110            |
| Aug. 10  | T. R. Patterson         | 1,923     | 157    | 731              | 2.30           | 2.70          | 1,350            |
| Sept. 13 | T. R. Patterson         | 1,057     | 159    | 323              | 1.43           | 2.09          | 332              |
| Oct. 4   | J. A. R. and T. R. P.   | 1,057     | 124    | 599              | 1.25           | 1.33          | 520              |

<sup>1</sup>Ice conditions.