

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 8-2002  
APPLICABLE TO INSTRUCTION 10-911  
DECEMBER 19, 2002***

***Operations and Services  
Hydrologic Services, NWSPD 10-9  
River Forecast Center Operations, NWSI 10-911***

***WATER SUPPLY VERIFICATION***

**OPR:** W/WR2x1 (G. Rishel)

**Certified by:** W/WR2 (R. Tibi)

**Type of Issuance:** Initial.

***SUMMARY OF REVISIONS:*** This directive supersedes Regional Operations Manual Letter (ROML) W-14-99, filed with WSOM E-33.

12/5/02

Vickie Nadolski  
Director, Western Region

Date

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1. Description: Water supply forecasts provided by the National Weather Service (NWS) are being used with increasing frequency by water managers. This increasing utilization has resulted in requests for information on the accuracy of such forecasts.

Verification of water supply forecasts is needed in order to effectively manage the hydrology program. Verification statistics can be utilized to determine how skillful our forecasts are and provide insight into areas for improvement. Water managers who utilize NWS water supply forecasts will also be able to utilize verification information in their decision making process.

Verification of water supply forecasts will be performed for a select number of representative locations each RFC's area of responsibility. The volume forecast will be made for a time period specified for each RFC. The locations and time periods of the verifications are listing in Appendix 1.

2. Purpose: The purpose of this ROML is to establish and implement standardized water supply verification procedures.

3. Format and Procedures.

Water supply verification information for the selected locations will be displayed in three ways:

- a. A histogram containing the volumetric forecasts issued each month for the current year. This plot should contain all available forecasts for the current year and display the historical average volume for the location. The histogram should be updated by the 15<sup>th</sup> of each month that an updated water supply forecast is issued. Appendix 2 contains an example of this histogram.
- b. A histogram containing each monthly volumetric forecast for a calendar year, the observed volume for that year, and the historical average volume for each

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location. This histogram should be issued by December 31 for the calendar year. Appendix 3 contains an example of this histogram.

- c. A plot of the absolute error of each monthly water supply forecast, expressed as a percentage of the observed volume, for the calendar year. An average forecast error for a representative period of record should be included on the plot for comparison purposes. This plot should be issued by December 31 for each calendar year. Appendix 3 contains an example of this plot.

These products shall be produced by each RFC for the points selected by the dates indicated. Copies of the products shall be forwarded to Western Region Headquarters Hydrological Services Division and retained on station. The products should also be made available on the RFC web pages for perusal by other NWS offices and cooperators.

**APPENDIX 1**

**List of Locations and Time Periods for Water Supply Forecast Verification**

Northwest River Forecast Center

April - September volumetric forecasts for:

Columbia River near the Dalles OR, Columbia River-Grand Coulee Inflow, South Fork Flathead River-Hungry Horse Reservoir Inflow, Okanagan River near Tonasket WA, North Fork Clearwater River-Dworshak Reservoir Inflow, and Snake River-Lower granite Reservoir Inflow

California-Nevada River Forecast Center

April - July volumetric forecasts for:

West Fork Carson River near Woodsford CA, Humboldt River at Palisades NV, Sacramento River-Shasta Lake Inflow, Yuba River near Smartville CA, Merced River below Merced Dam Falls near Snelling CA, and Kern River below Isabella Dam

Colorado Basin River Forecast Center

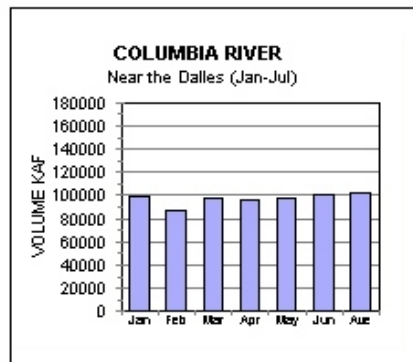
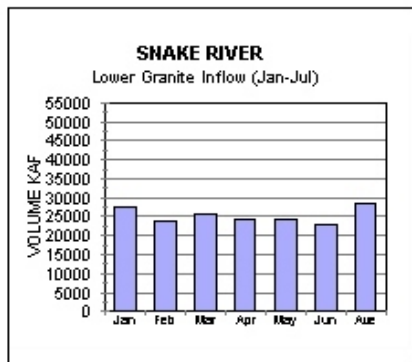
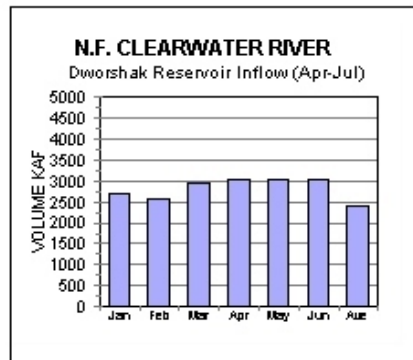
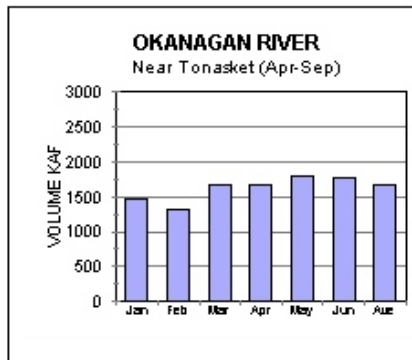
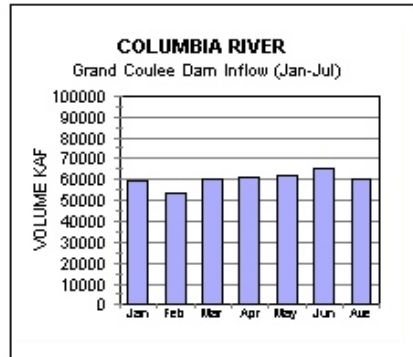
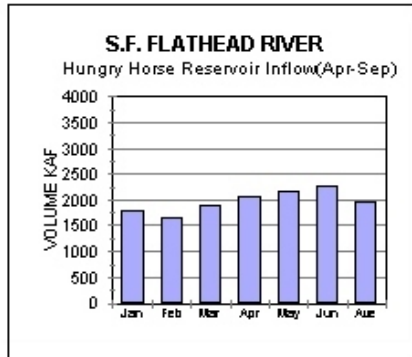
April - July volumetric forecasts for:

Roaring Fork River at Glenwood Spring CO, New Fork River near Big Piney WY, San Juan River at Pagosa Springs CO, Gila River near Solomon-Head of Safford Valley AZ, Weber River near Oakley UT, and Sevier River at Hatch UT

APPENDIX 2

Example of Monthly Histogram

2002  
 WATER SUPPLY VOLUME FORECASTS  
 NORTHWEST RIVER FORECAST CENTER



APPENDIX 3

Example of Annual Histograms

2001  
WATER SUPPLY VERIFICATION  
COLORADO BASIN RIVER FORECAST CENTER

