

5. Conclusions

The following conclusions are drawn from the monitoring information collected during 2001:

- ❑ The North East stream monitoring for the year 2001 was of good quality.
- ❑ The only gaps in the record were caused by malfunction of salinity probes for short periods of time.
- ❑ Flow and salinity were representative of low flow conditions with flow weighted salinity being above average for each site. Salinity levels at the Three Mile Creek site appear to have been influenced by an unknown discharge to the Creek.
- ❑ The following catchment information is currently available from NRE
 - ❑ Digital Elevation Model (DEM)
 - ❑ Land systems
 - ❑ Landuse
 - ❑ Salinity discharge sites
 - ❑ Geology and soil data

This information should be used to examine salt generation processes and possibly target areas of higher salt load contribution for assessment of remedial options.

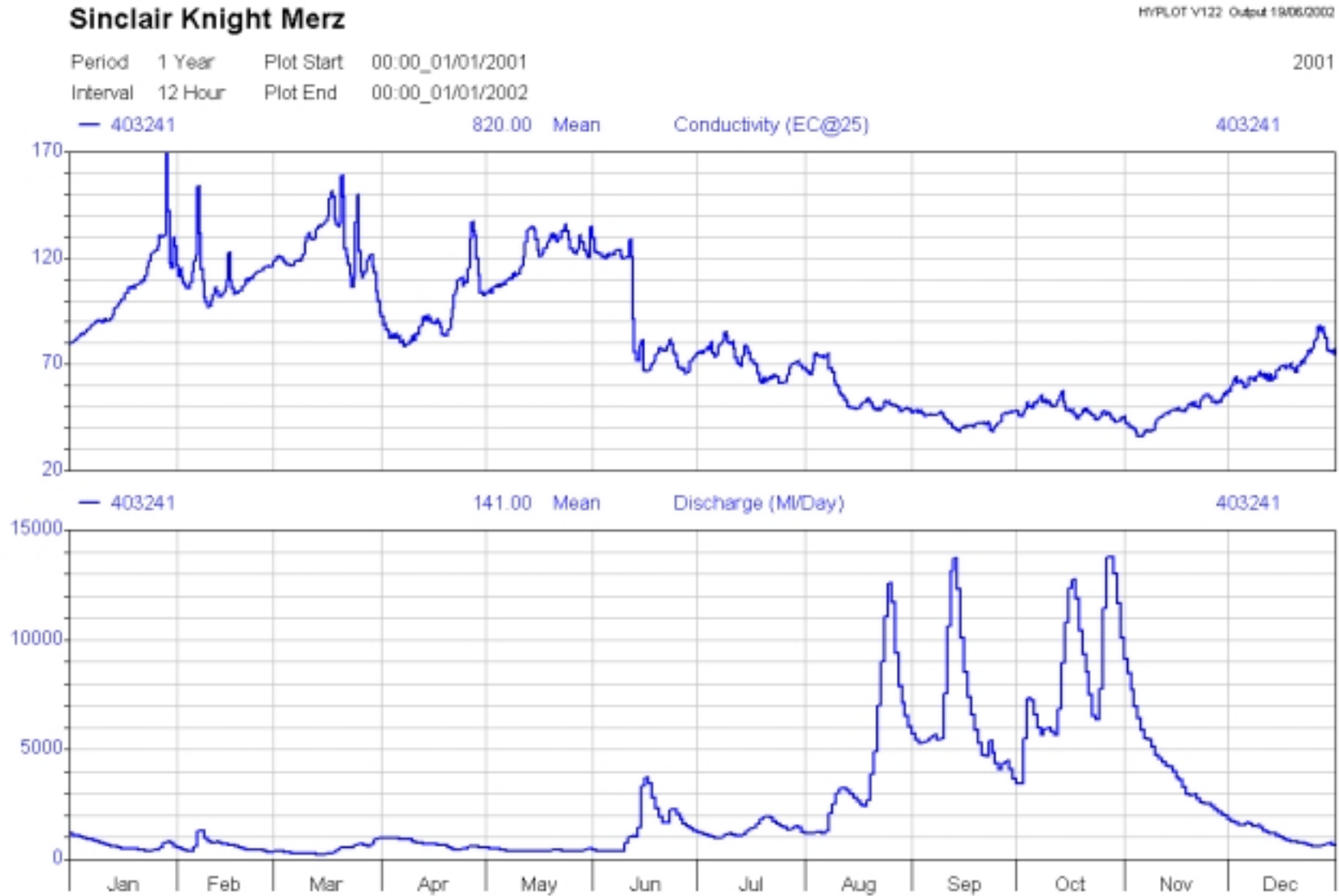
6. Recommendations

The recommendations from this report are:

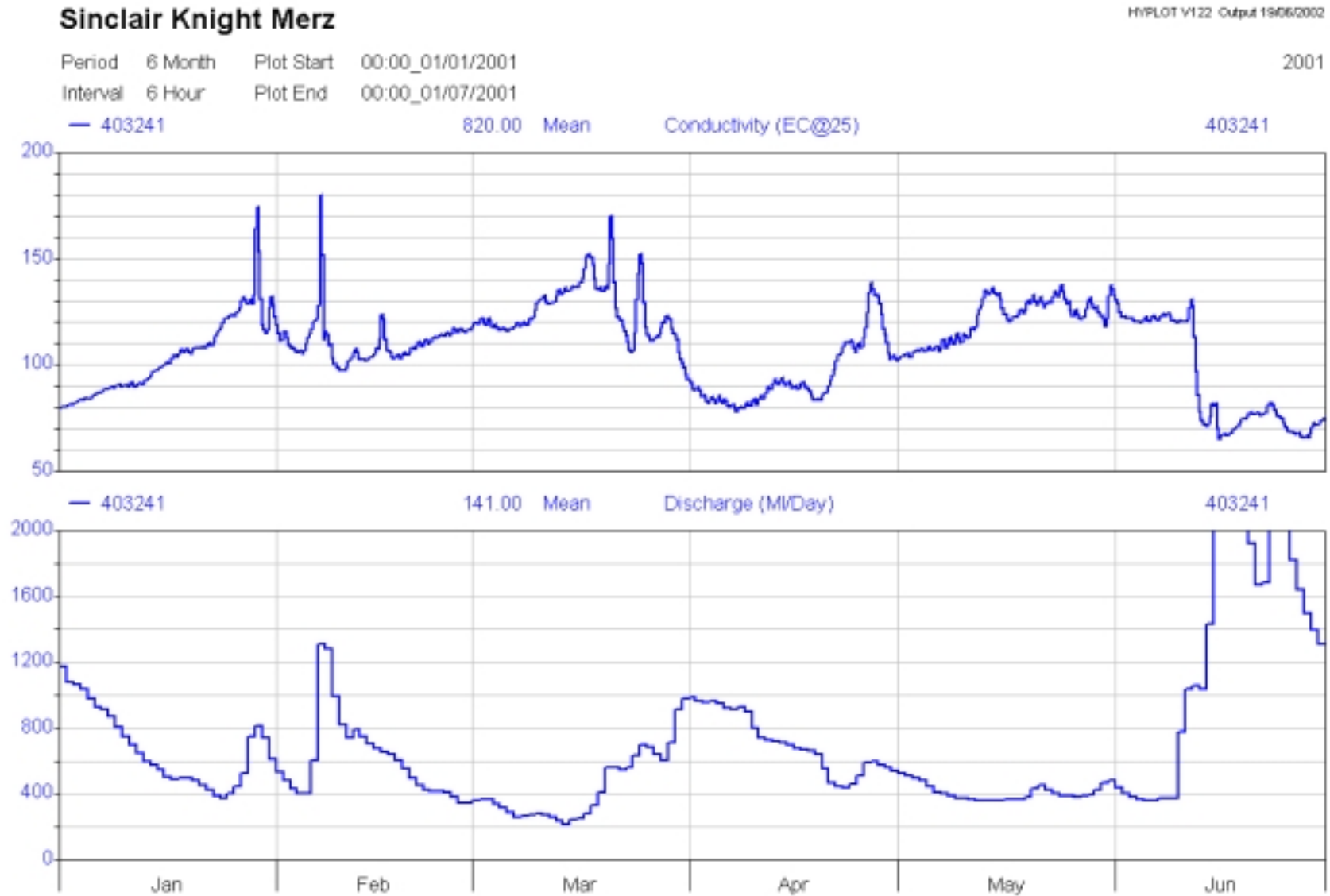
- Data collection at the four locations included in this study should continue to provide an on-going record of flow and salinity parameters in the Ovens catchments.
- Consideration should be given to the continued development of more detailed catchment and climate information, based on the monitoring data available, that will assist with the future evaluation of the North-East Salinity Strategy. This process has been initiated and should be formally coordinated to ensure efficient utilisation of resources.
- Further investigations are required to resolve water quality issues on the Three Mile Creek.
- Catchment boundaries should be defined for both low flow and high flow conditions to enable better understanding of salt load generation.

Appendix A Raw Data Plots

■ Figure 6-1 Ovens River – Station 403241 Flow and Salinity 2001



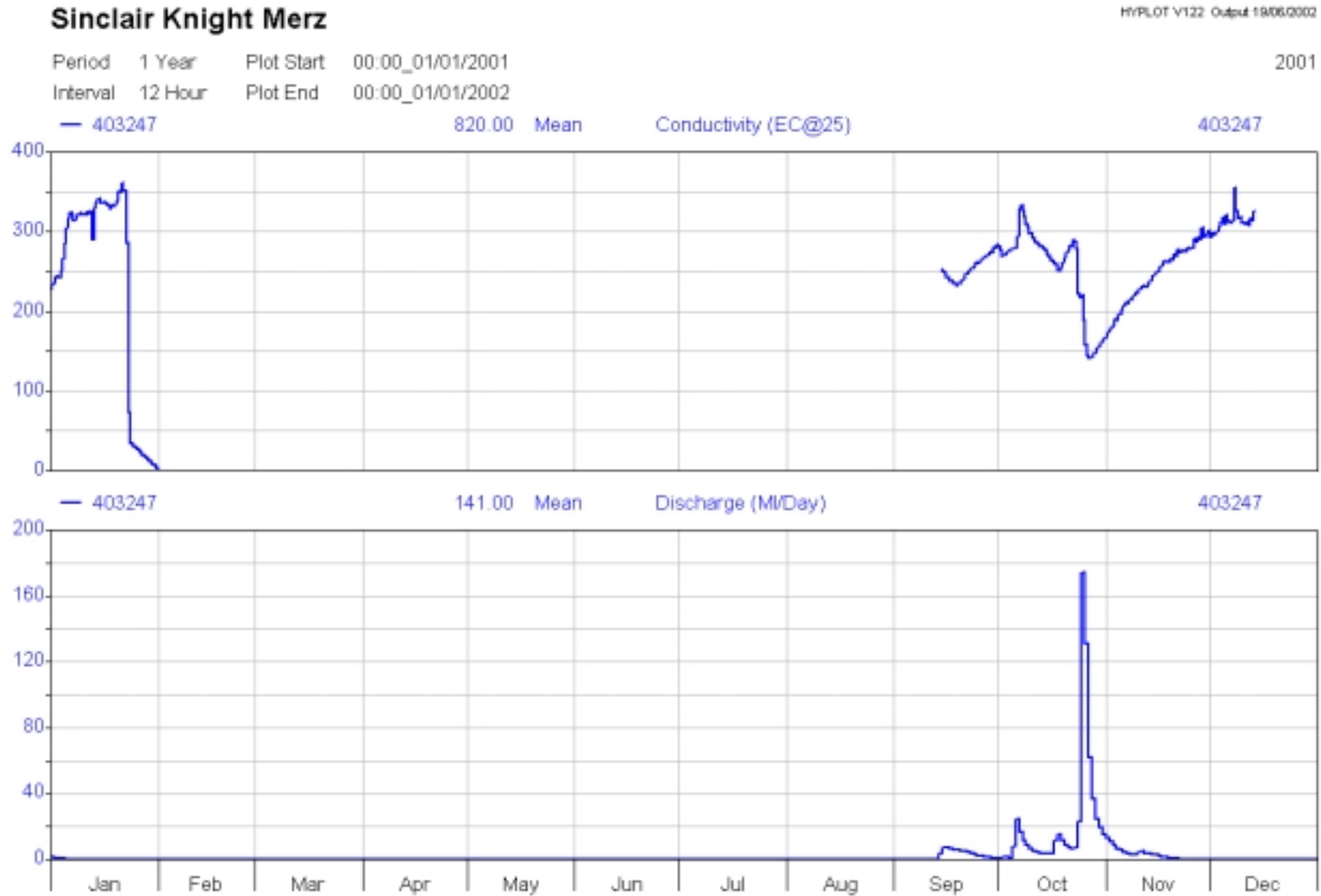
■ Figure 6-2 Ovens River - Station 403241 Flow and Salinity (January to June 2001)



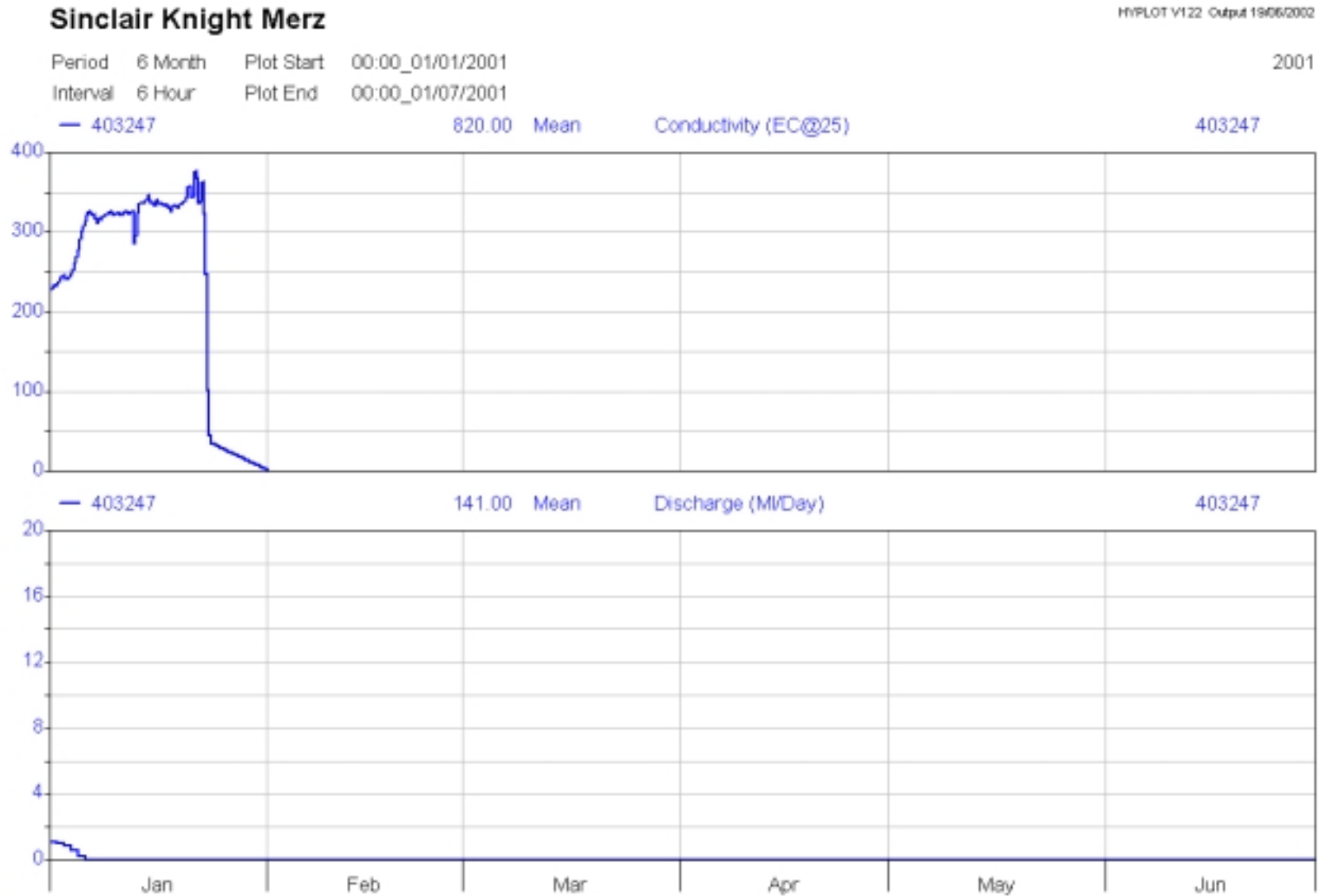
■ Figure 6-3 Ovens River - Station 403241 Flow and Salinity (July to December 2001)



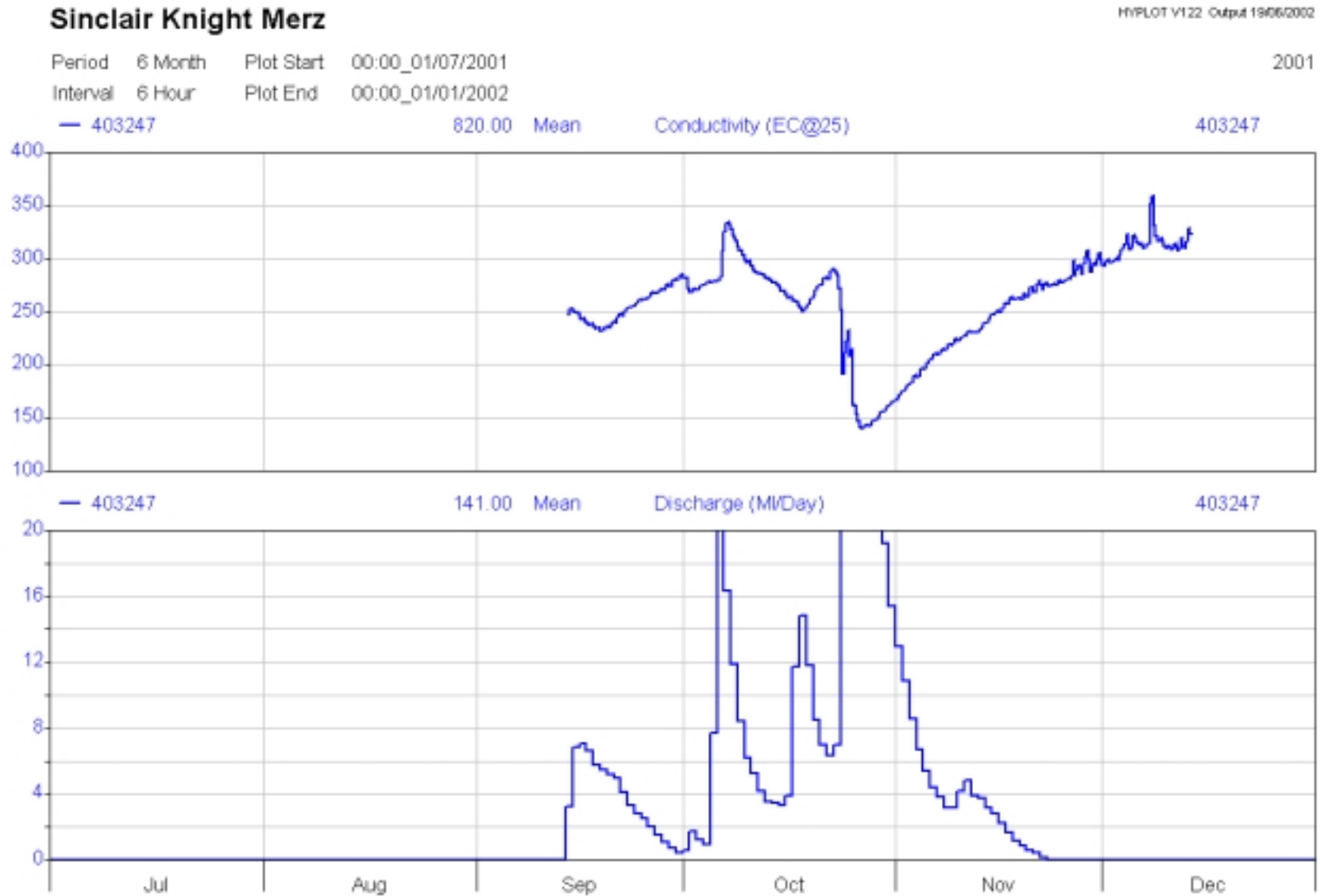
■ Figure 6-4 Black Dog Creek – Station 403247 Flow and Salinity 2001



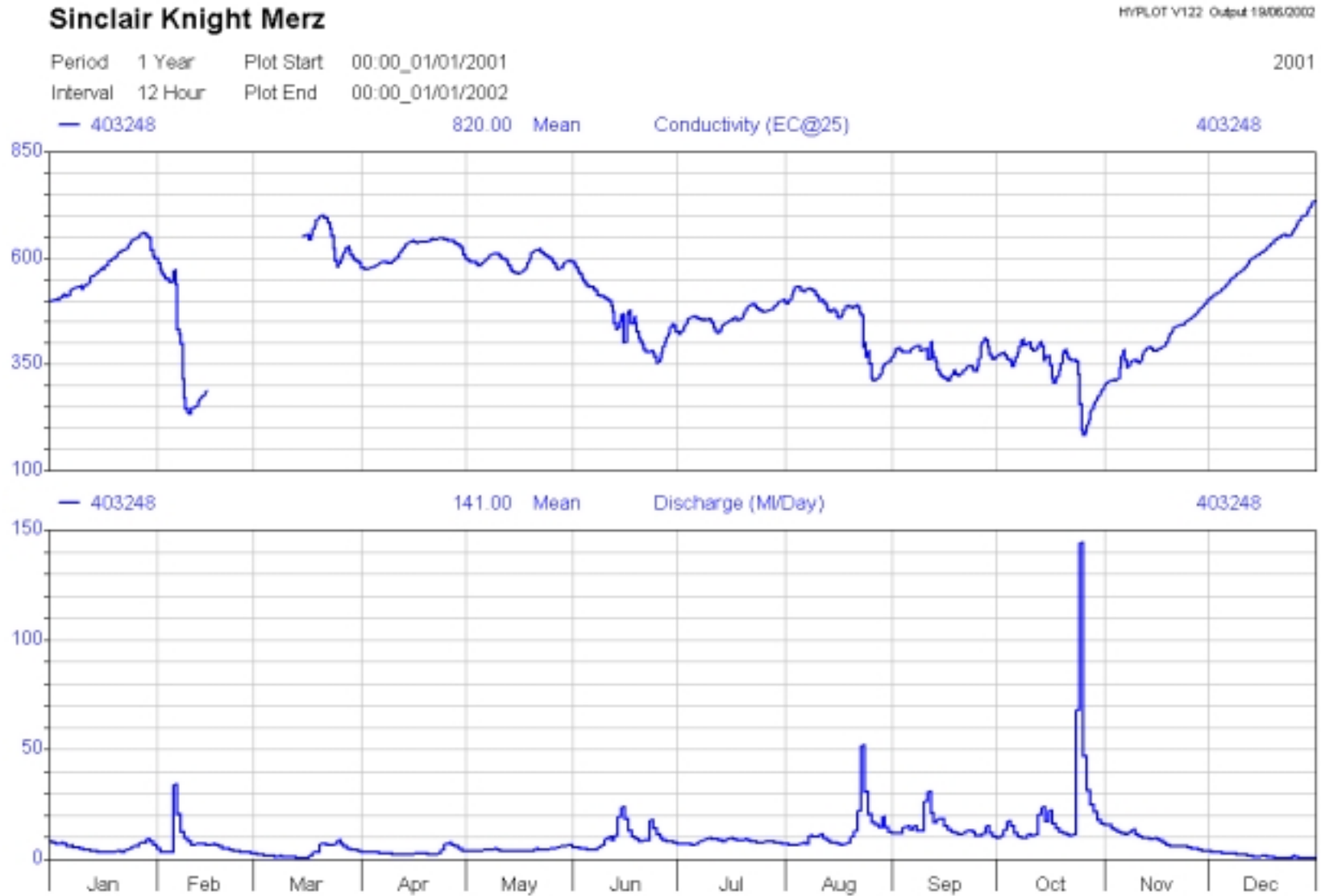
■ Figure 6-5 Black Dog Creek – Station 403247 Flow and Salinity (January to June 2001)



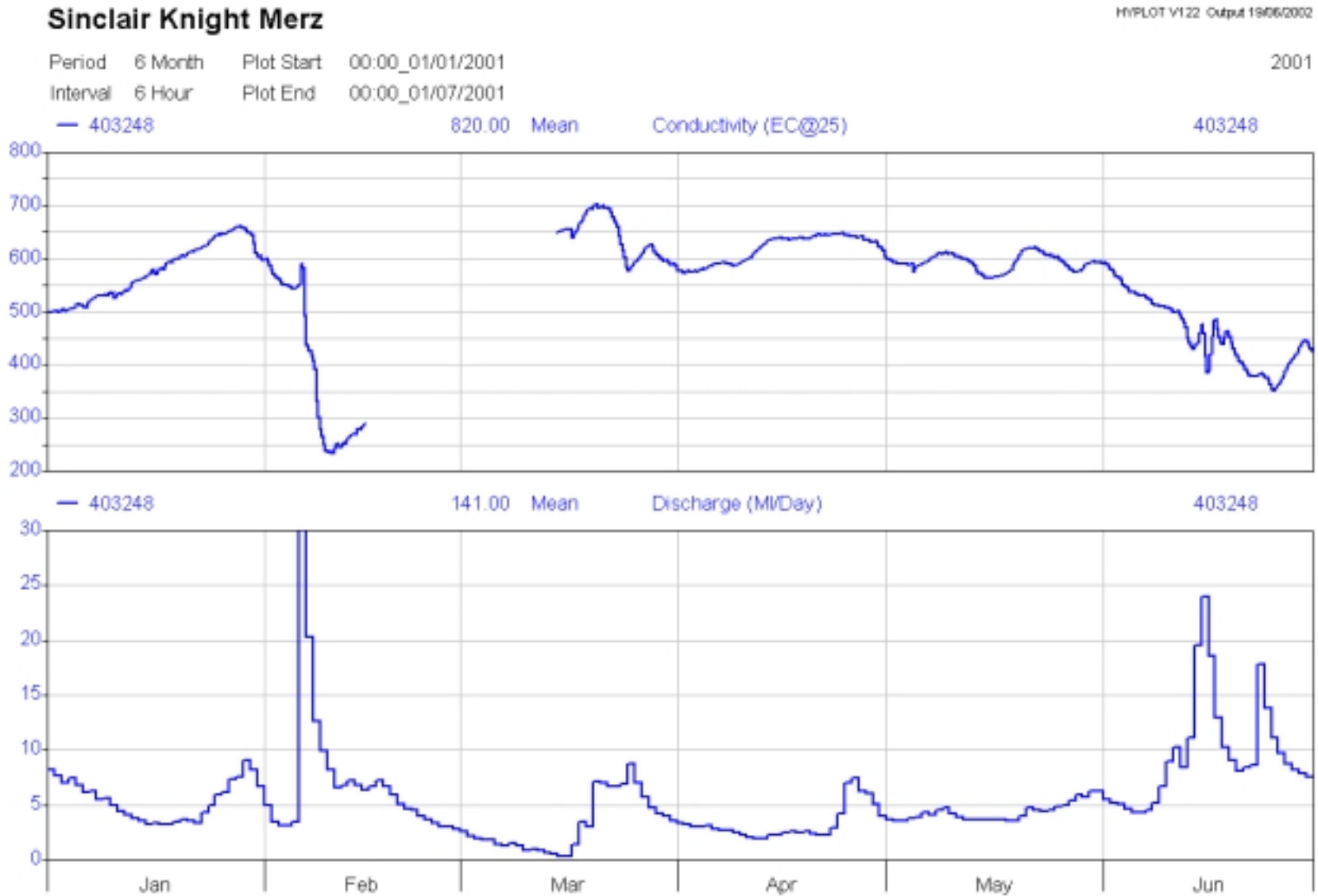
■ Figure 6-6 Black Dog Creek – Station 403247 Flow and Salinity (July to December 2001)



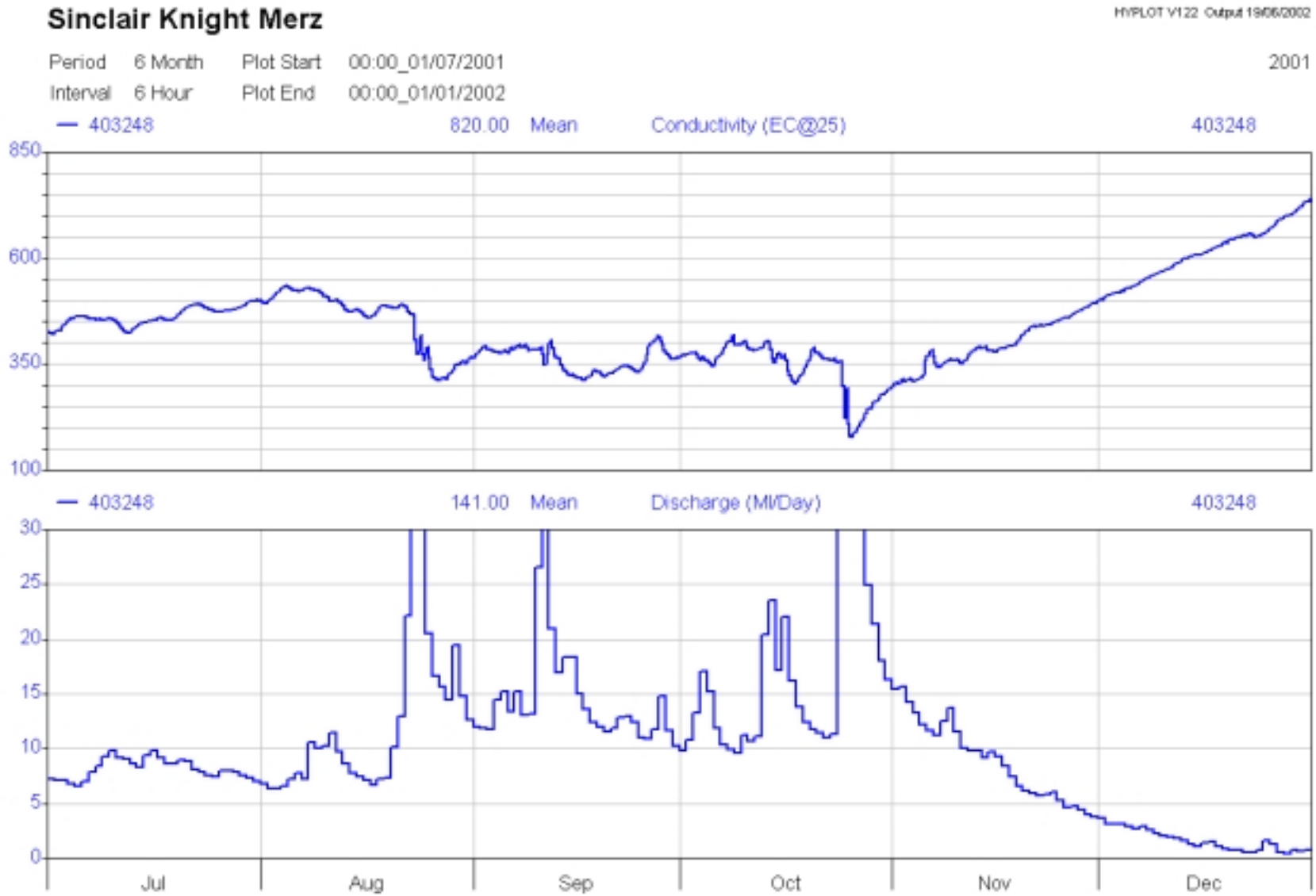
■ Figure 6-7 Indigo Creek – Station 403248 Flow and Salinity 2001



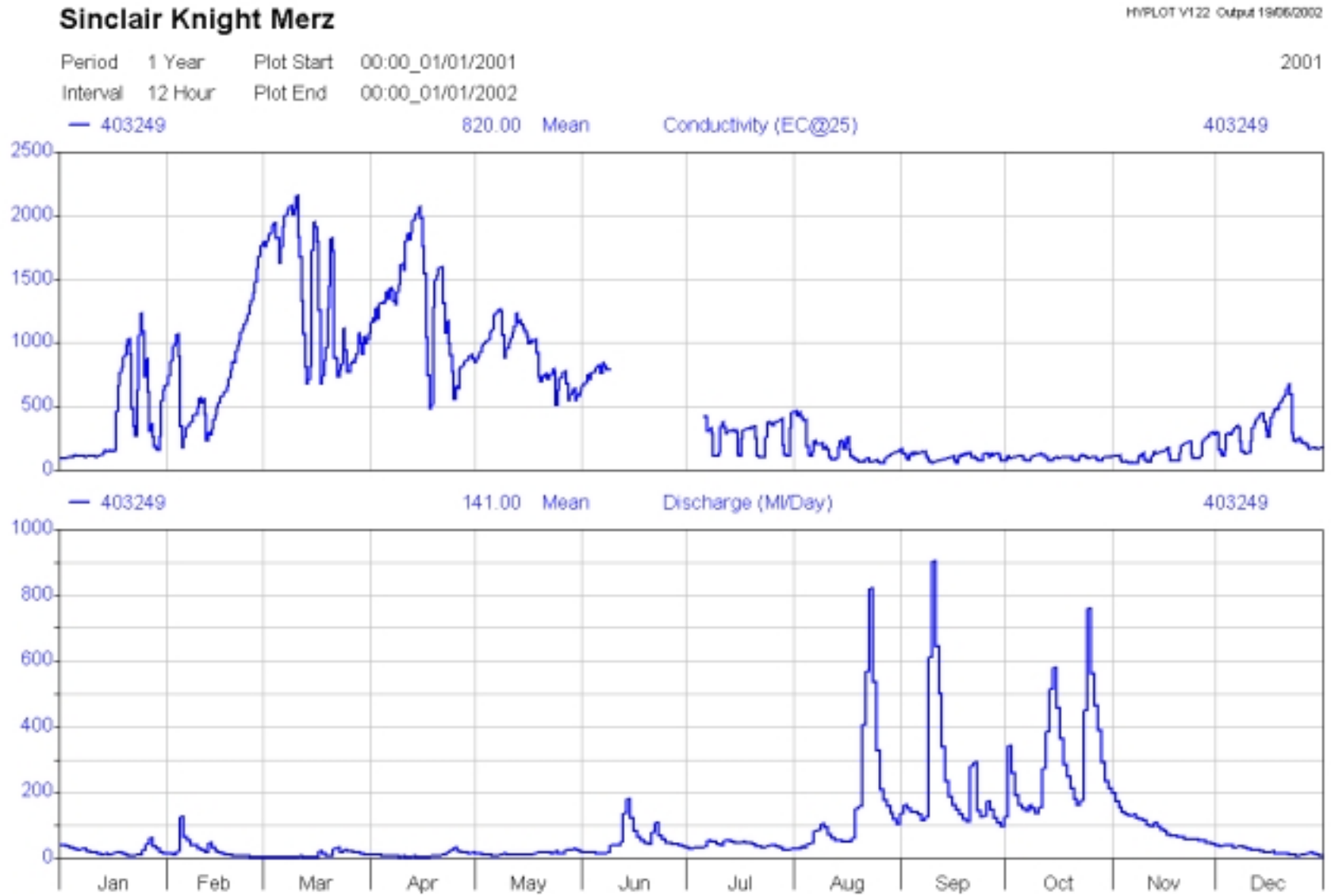
■ Figure 6-8 Indigo Creek – Station 403248 Flow and Salinity (January to June 2001)



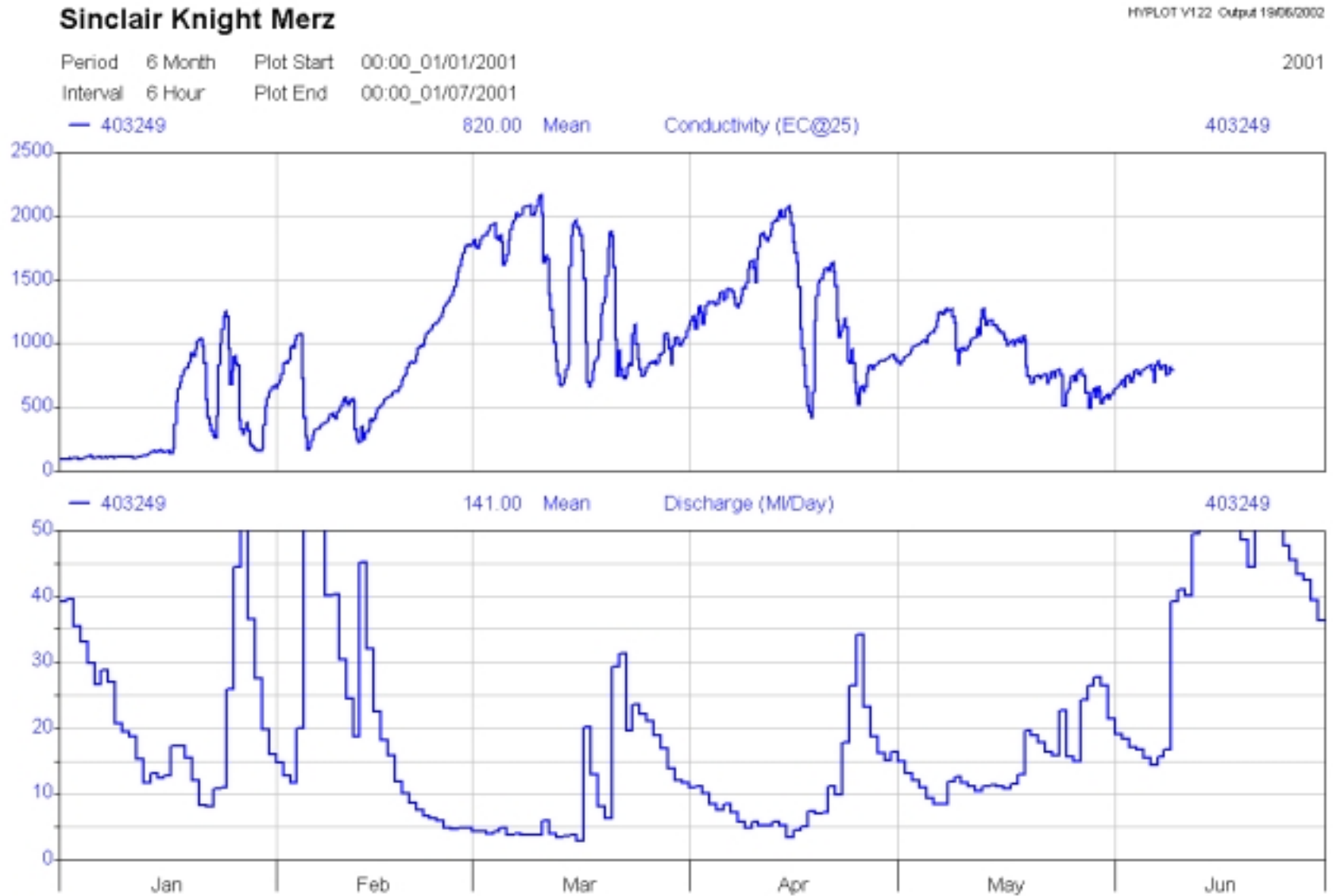
■ Figure 6-9 Indigo Creek – Station 403248 Flow and Salinity (July to December 2001)



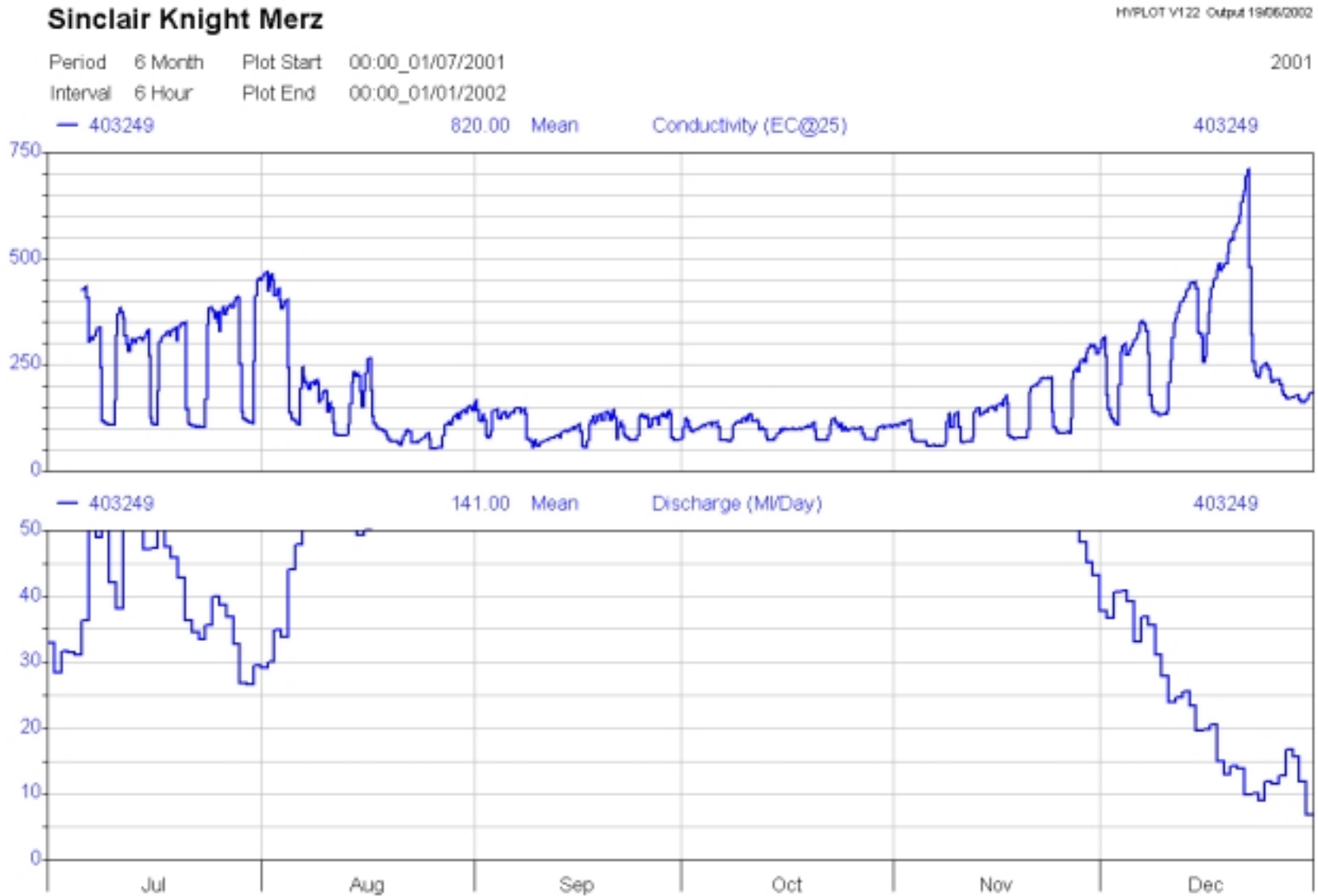
■ Figure 6-10 Three Mile Creek – Station 403249 Flow and Salinity 2001



■ Figure 6-11 Three Mile Creek – Station 403249 Flow and Salinity (January to June 2001)



■ Figure 6-12 Three Mile Creek – Station 403249 Flow and Salinity (July to December 2001)



Appendix B Missing Data

■ Table 6-1 Missing Data Summary - 2001

Station Name	Station Number	Parameter Measured	Raw Data Missing (1)	Estimated During Processing (2)	Final Data Missing (3)	Comment
Ovens River @ Peechelba	403241	Flow	0	0	0	-
		Salinity	0	0	0	-
Black Dog Creek @ Parris Rd, Brimin	403247	Flow	0	0	0	-
		Salinity	0	0	0	-
Indigo Creek	403248	Flow	3	0	3	Additional gauging required Malfunction
		Salinity	28	0	28	
Three Mile Creek	403249	Flow	0	0	0	-
		Salinity	27	0	27	Malfunction

Note : Missing salinity data during periods of no flow were not included in the above table, as salinity data is not expected in a dry stream.

- (1) Raw data missing - is classed as the data obtained directly from the on site logger.
- (2) Estimated during processing - is classed as the data which has been estimated by Thiess during initial processing.
- (3) Final data missing - is classed as the data which cannot easily be estimated and is classed as missing.

The following data is not classed as missing from the raw data set:
Estimated data with a quality code of 15* or less is considered good quality data.

Appendix C Estimated Data

■ **Table 6-2 Estimated Data Summary**

Station Name	Station Number	Parameter	Code			Flow QC 2-99	Flow QC 100-150	Salinity QC 2-99	Salinity QC 100-150
			2	15	150				
Ovens River @ Peechelba	403241	Flow	365	0	0	365	0	-	-
		Salinity	357	8	0	-	-	365	0
Black Dog Creek @ Parris Rd, Brimin	403247	Flow	305	0	0	305	0	-	-
		Salinity	72	4	0	-	-	76	0
Indigo Creek	403248	Flow	345	17	3	362	3	-	-
		Salinity	337	0	0	-	-	337	0
Three Mile Creek	403249	Flow	365	0	0	365	0	-	-
		Salinity	332	6	0	-	-	338	0

- 2 Good quality edited data
- 15 Minor Editing of record
- 150 Rating extrapolated due to insufficient gaugings

Comments

The quality code (QC) is used to represent the accuracy of the data. The higher the QC the less accurate the data is. QC's between 1 and 99 are classed as good reliable data with QC's from 100 to 150 classed as estimated data of less accuracy. Users need to be aware that data with quality codes higher than 99 should be re-examined before use in any important study.

The following comments are made regarding the estimated data presented in Table 6-2:

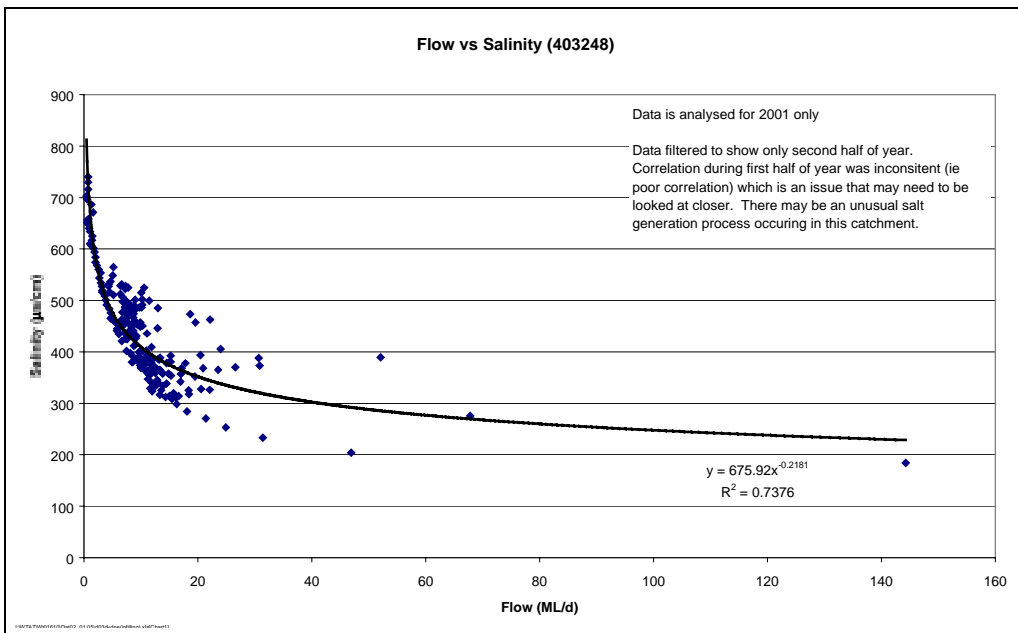
- A quality code of 150 indicates that insufficient measurements at high flows have been taken. Although this is the best estimate of flow at present, further high flow measurements will improve the accuracy of high flow records.

Appendix D Infilling Techniques

The only infilling required to produce salt loads was for the data that were lost due to salinity probe malfunction.

The correlation shown in Figure 6-13 Figure 6-14 were used to infill the salinity records. Some filtering was undertaken to obtain a representative relationship for catchments and so a review of this infilling should be undertaken when better information is available.

■ **Figure 6-13 Salinity-Flow Correlation for Site 403248**



■ Figure 6-14 Salinity-Flow Correlation for Site 403249

