Appendix B

Rainfall and Flow Graphical Presentation

Appendix B. Rainfall and Flow Graphical Presentations

The purpose of this appendix is to illustrate the sample categorization decisions made for this project. More detail is available in the main report under Section 4.3.1. Samples were categorized using the following definitions:

Dry baseflow: Samples collected from mid-September through early November. For each dry baseflow sample there was no rainfall during the sampling period or 24 hours prior to the sampling period.

- Due to logistical constraints, many dry baseflow samples were collected after the SAP-defined dry period of July-September; however, flow conditions during October and early-November 2012 were compared to conditions during July and August, and were deemed similar through best professional judgment.

- Exceptions: There was one baseflow sample with a total of 0.01 inches of rain during the sampling period, and two with 0.01 inches of rain within 12 hours prior to sampling. Rainfall data were collected from the East Marginal rain gauge, which is likely not representative of the entire Brandon CSO basin. Rainfall data from three additional rain gauges located near the Brandon CSO basin were also reviewed. Baseflow conditions appeared to be maintained when, for each of the three events, only one of the four rain gauges registered 0.01 inches of rain; therefore, the three baseflow samples collected with 0.01 inches of rain at the East Marginal gauge were retained as dry baseflow samples.

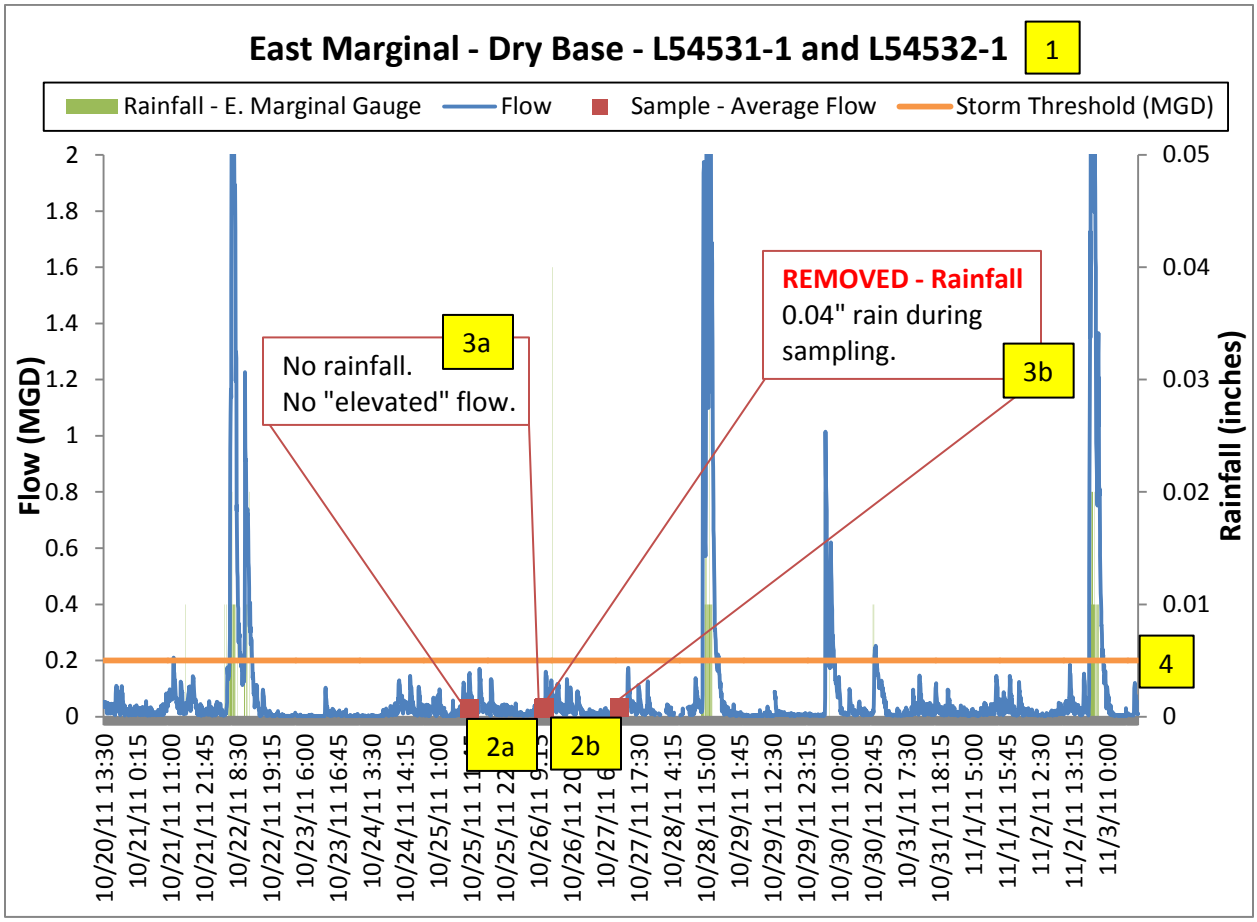
Wet baseflow: Samples collected from February to June, during which there was no rainfall.

- Due to logistical constraints, many wet baseflow samples were collected after the SAP-defined targeted wet period of November through March; however, precipitation patterns in the April-June 2012 months were deemed to approximate wet season conditions.

Storm conditions: Samples collected during periods of rainfall, with greater than 50% of the sample volume collected during "elevated" flows.

- Flows were considered "elevated" if they rose above 0.05 million gallons per day (MGD) at the Utah sampling location, 0.2 MGD at the East Marginal sampling location and 0.5 MGD at the Brandon Regulator location. These flow thresholds were based on best professional judgment and considered to be above normal baseflow variability, and almost always associated with rainfall.

Example Figure Explanation:



1. This example illustrates flow conditions for two samples, because they were collected back to back.
2. The sample period is between the red squares, connected by the text box. The red squares are plotted at the average flow value for the sample period.
3. Red-outline text boxes describe why samples were retained or REMOVED.
4. Storm thresholds or "elevated" flows, which define where storm conditions are identified in the system.

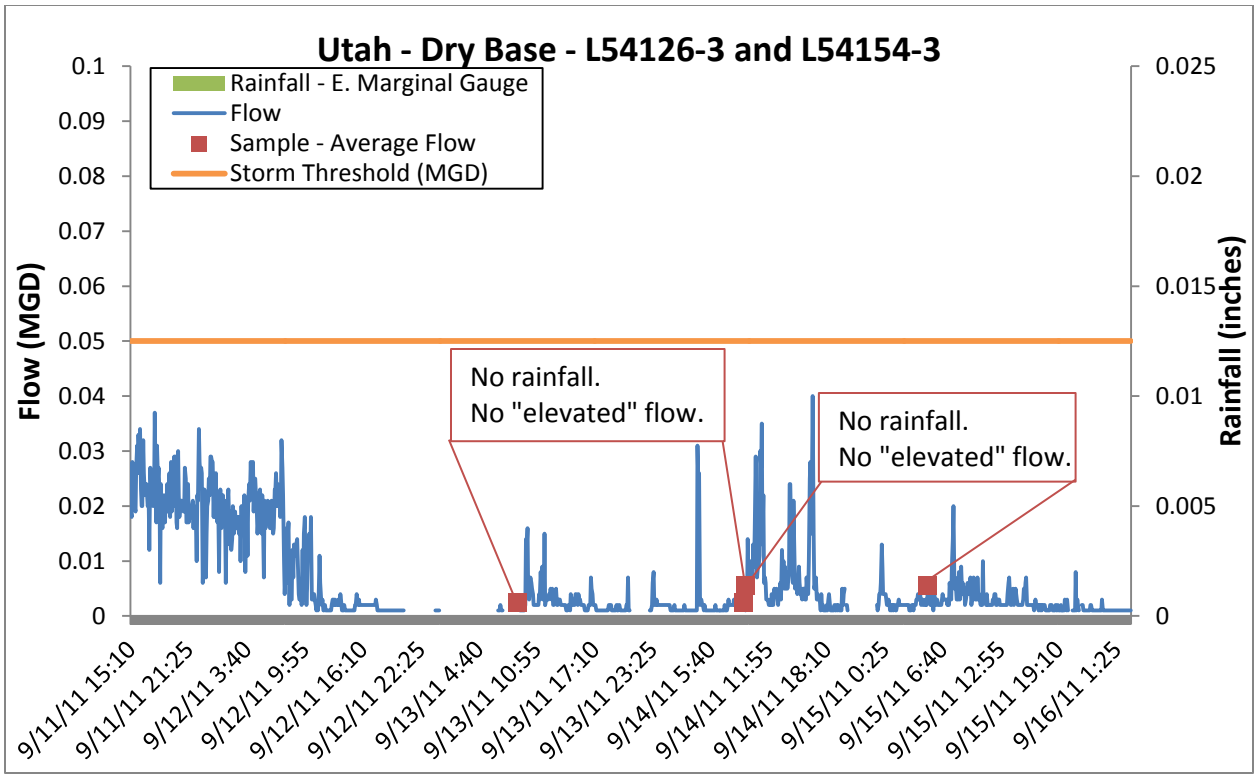


Figure B-1. Hydrograph at Utah from 9/11/11 to 9/16/11, dry baseflow samples L54126-3 and L54154-3.

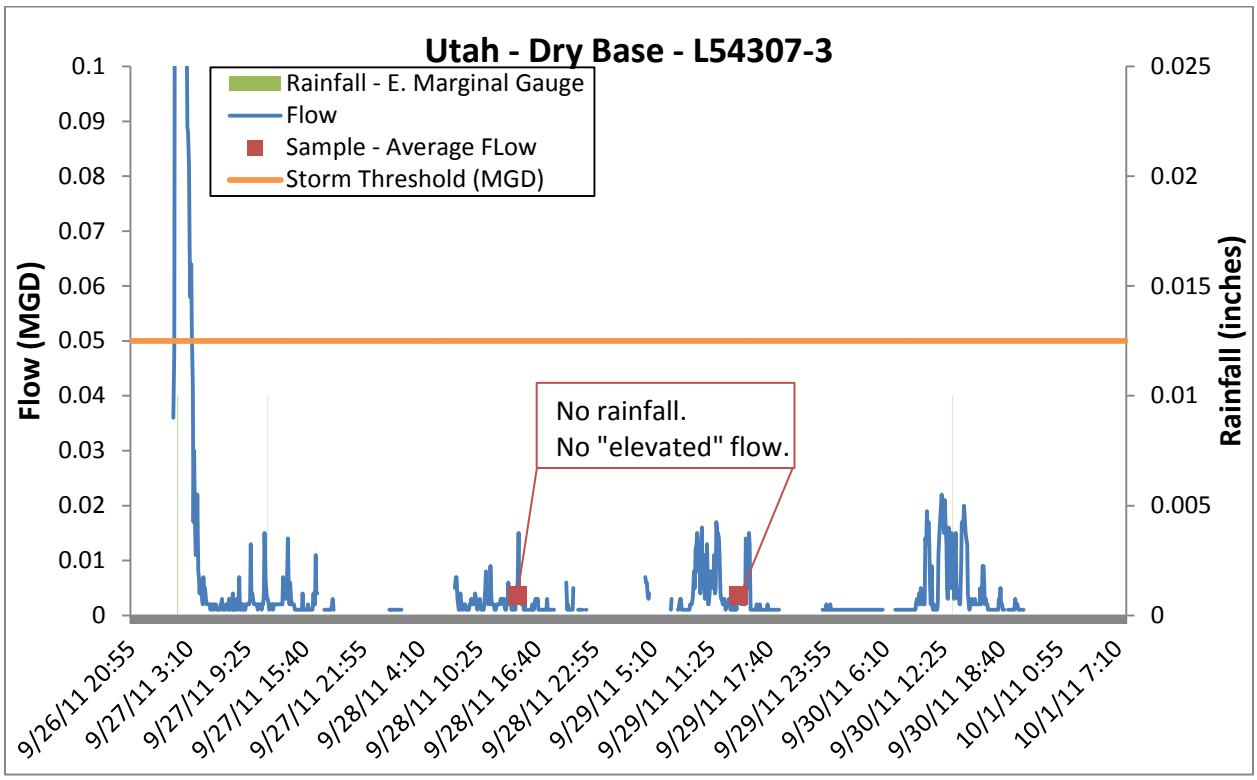


Figure B-2. Hydrograph at Utah from 9/26/11 to 10/1/11, dry baseflow sample L54307-3.

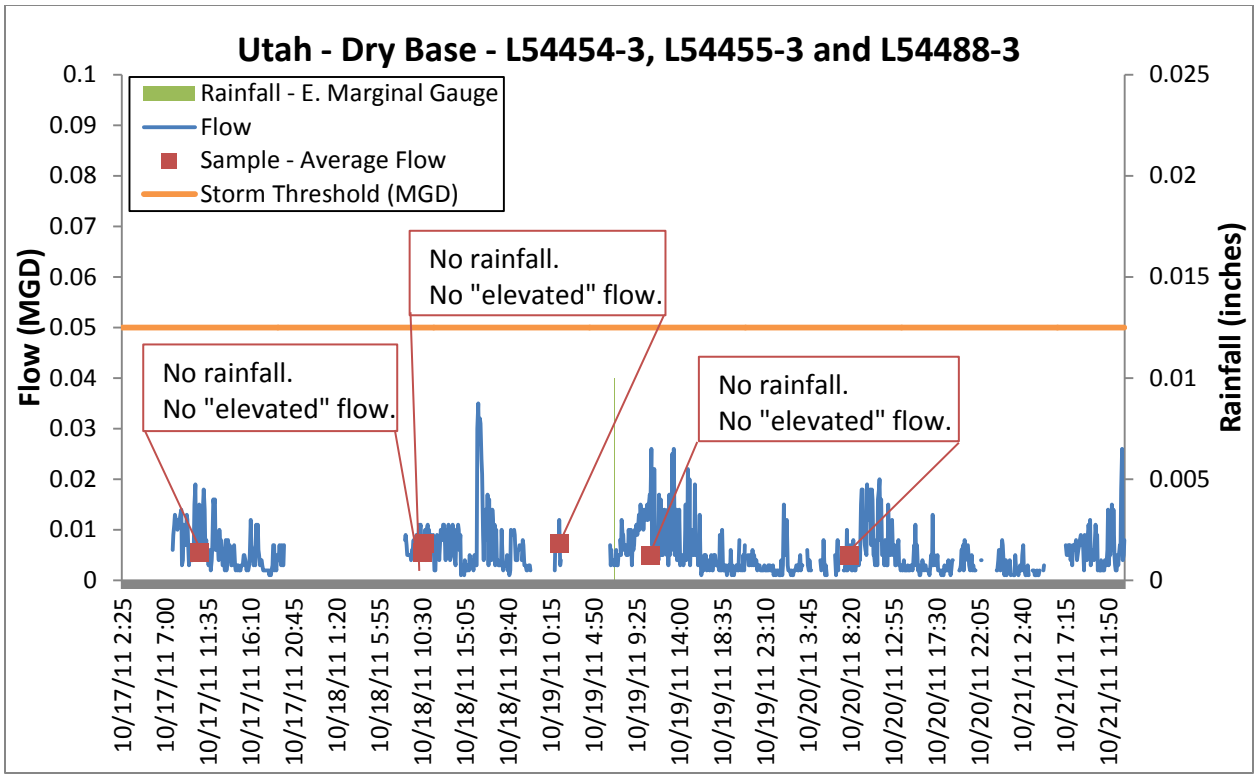


Figure B-3. Hydrograph at Utah from 10/17/11 to 10/21/11, dry baseflow samples L54454-3, L54455-3, L54488-3.

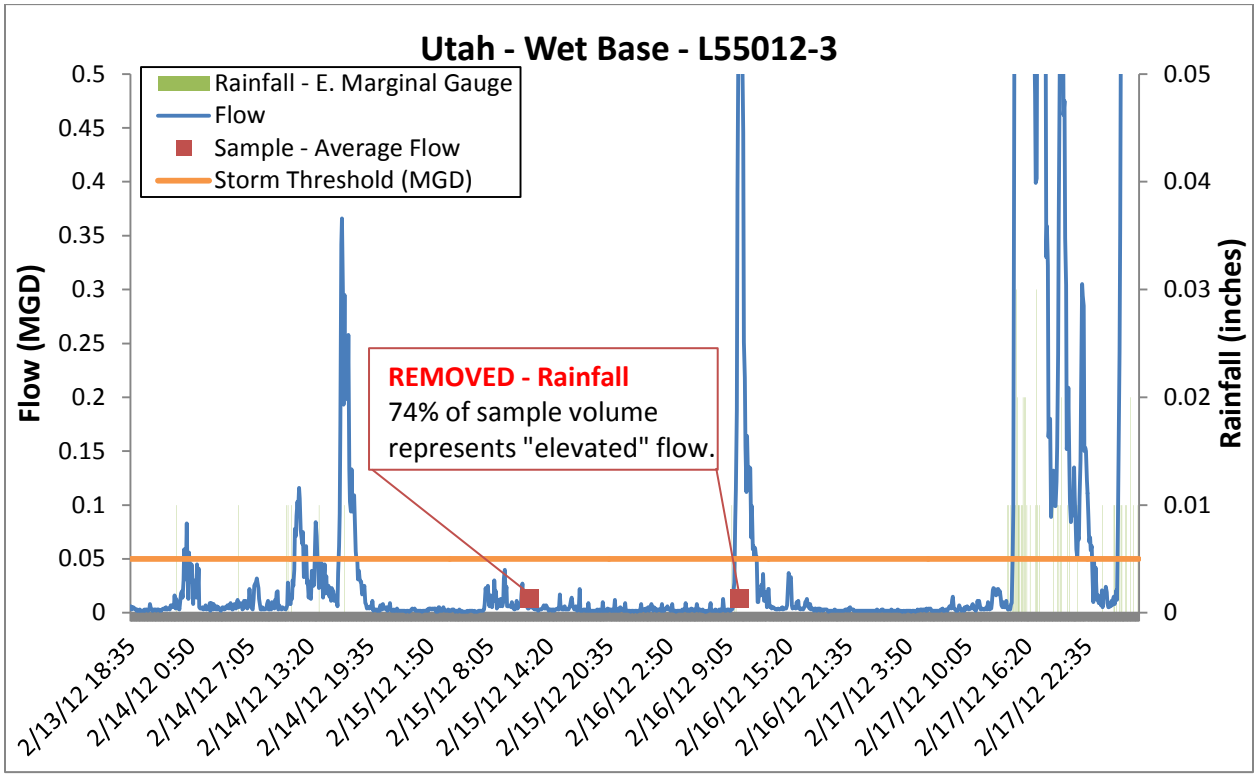


Figure B-4. Hydrograph at Utah from 2/13/12 to 2/17/12, wet baseflow sample L55012-3.

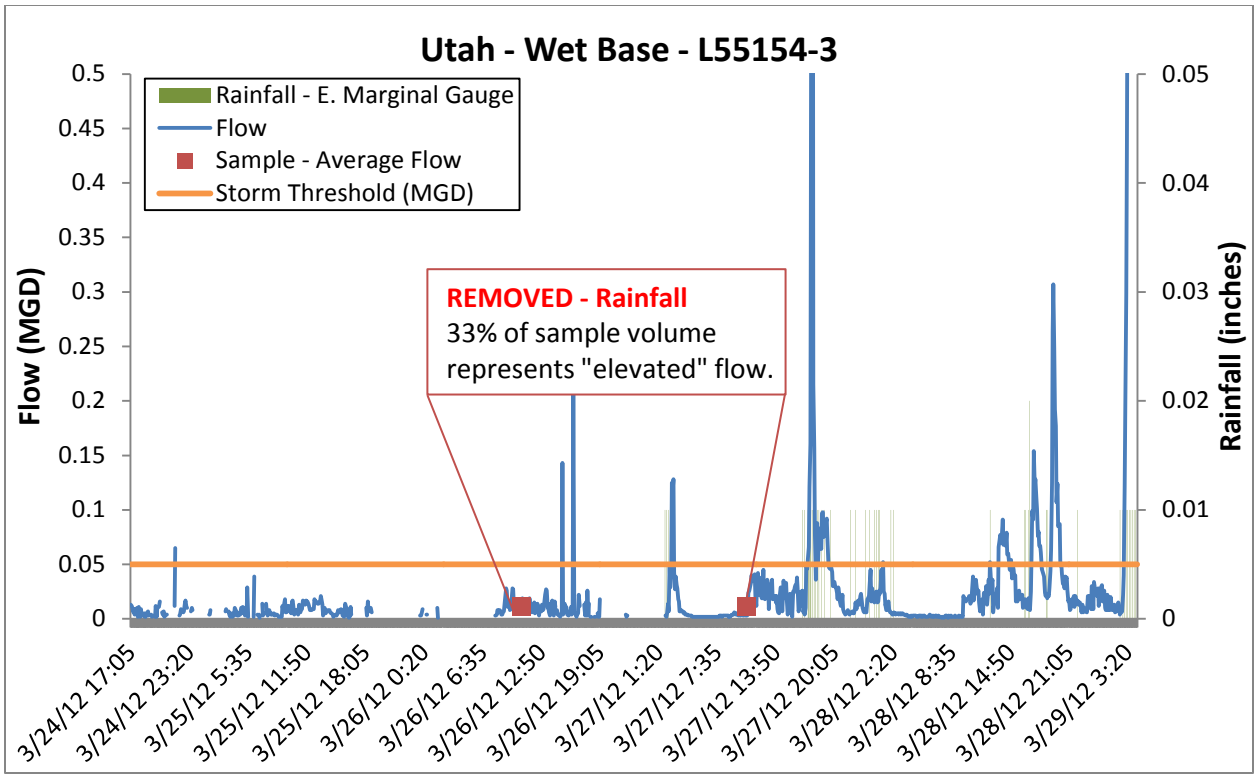


Figure B-5. Hydrograph at Utah from 3/24/12 to 3/29/12, wet baseflow sample L55154-3.

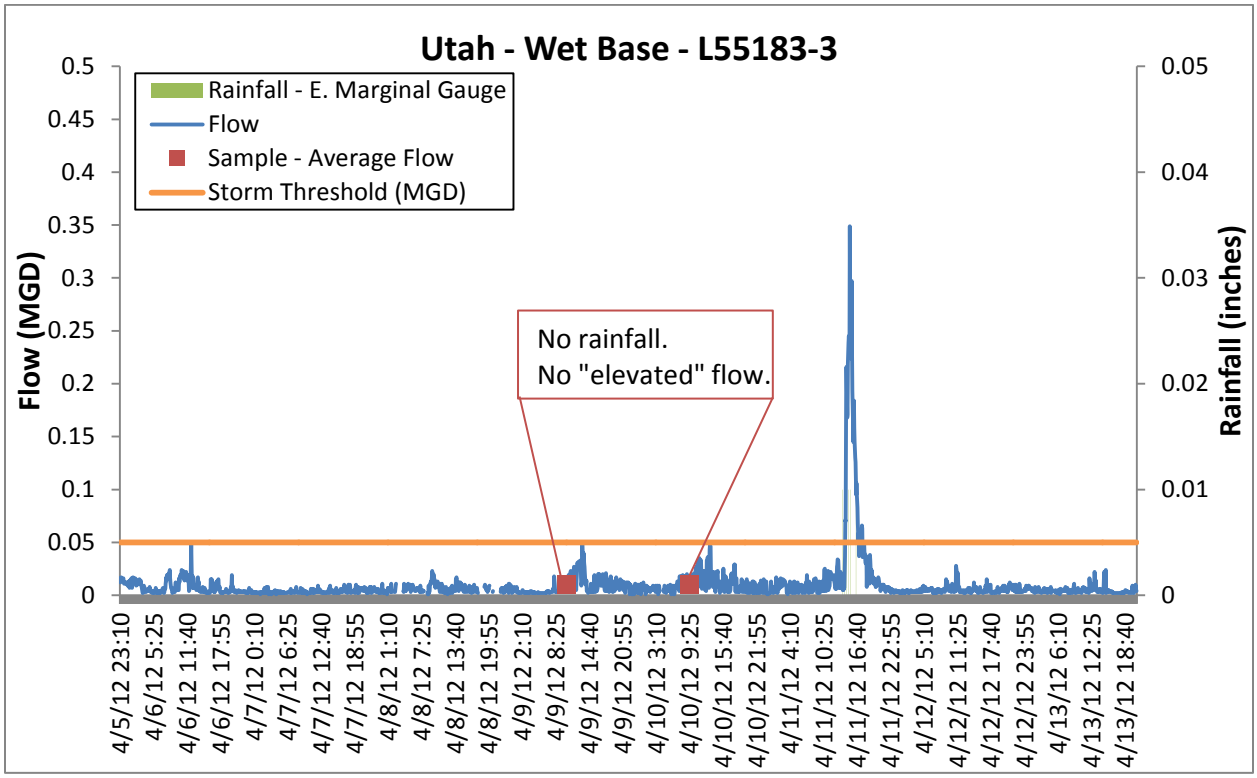


Figure B-6. Hydrograph at Utah from 4/5/12 to 4/13/12, wet baseflow sample L55183-3.

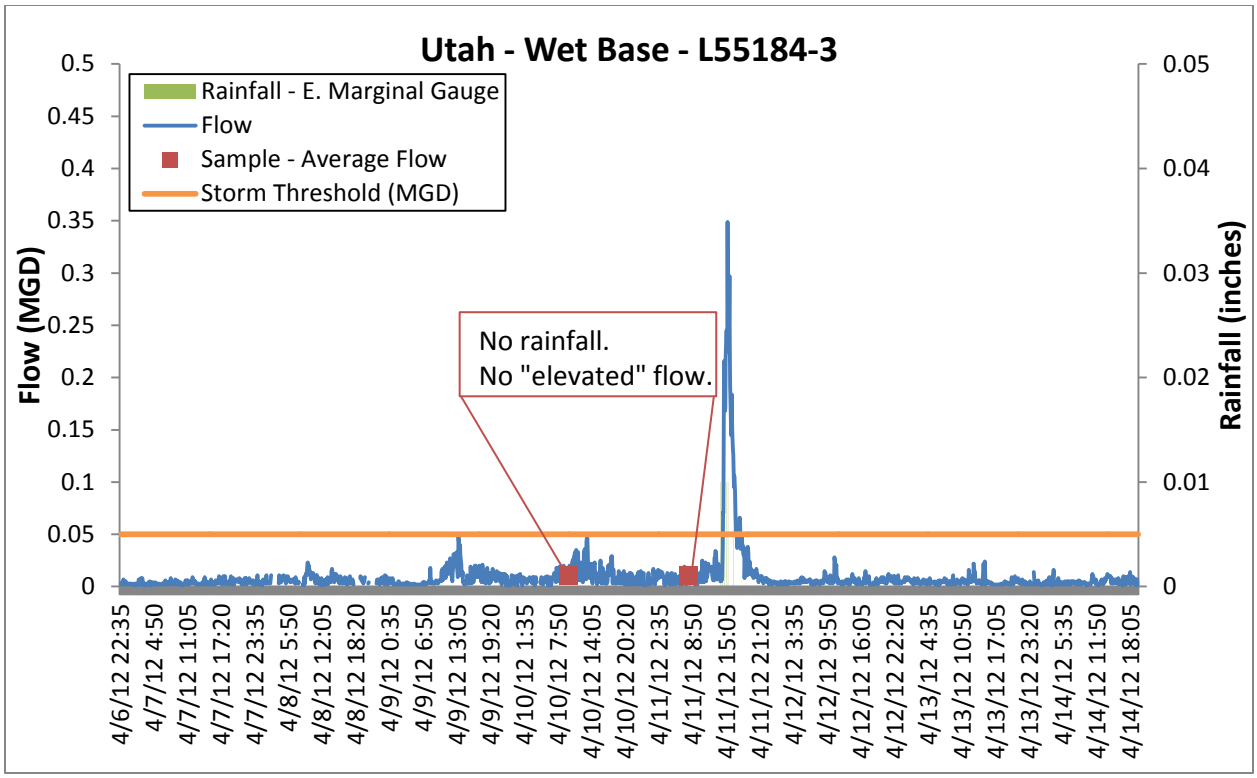


Figure B-7. Hydrograph at Utah from 4/6/12 to 4/14/12, wet baseflow sample L55184-3.

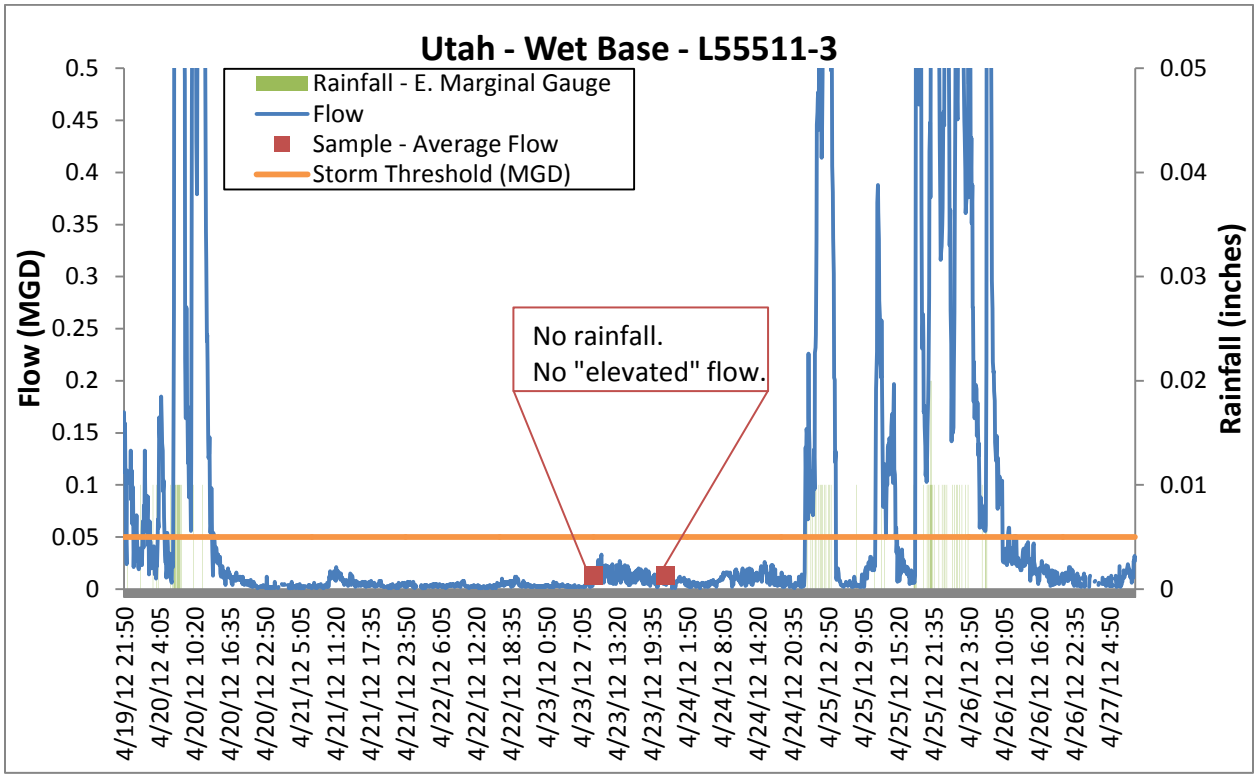


Figure B-8. Hydrograph at Utah from 4/19/12 to 4/27/12, wet baseflow sample L55511-3.

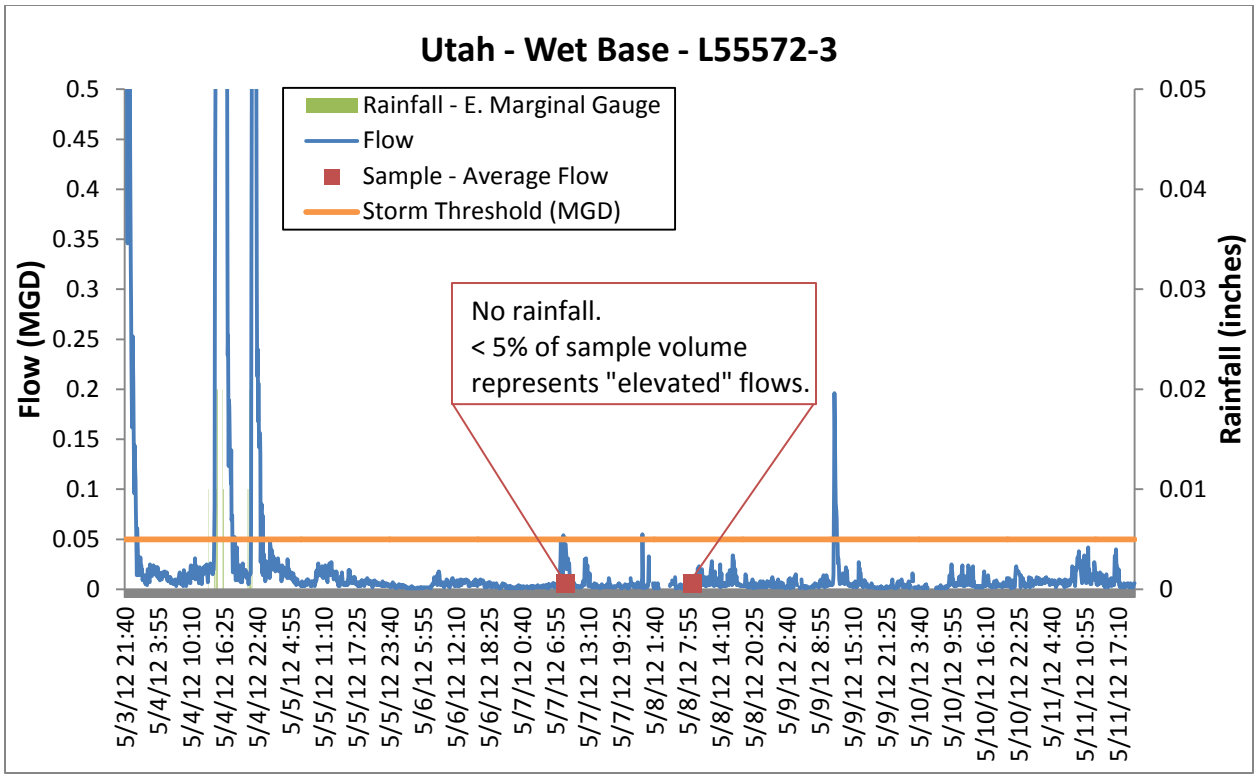


Figure B-9. Hydrograph at Utah from 5/3/12 to 5/11/12, wet baseflow sample L55572-3.

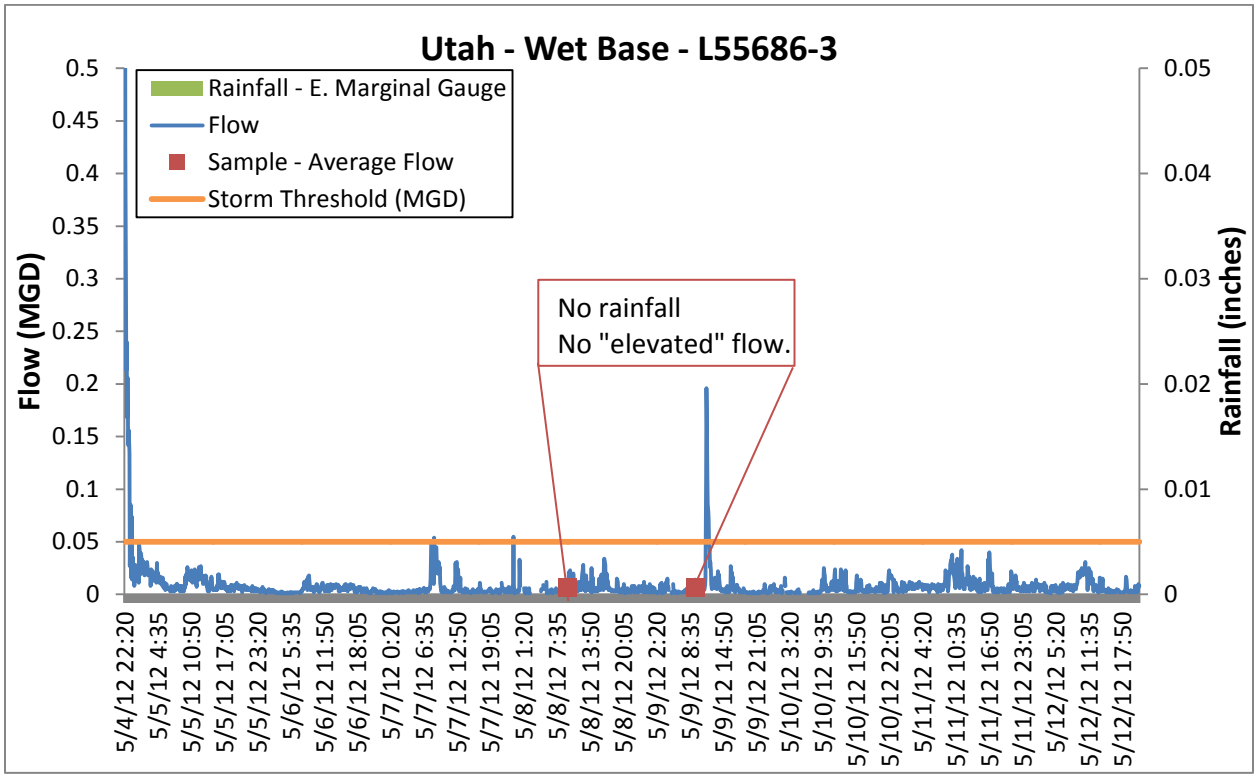


Figure B-10. Hydrograph at Utah from 5/4/12 to 5/12/12, wet baseflow sample L55686-3.

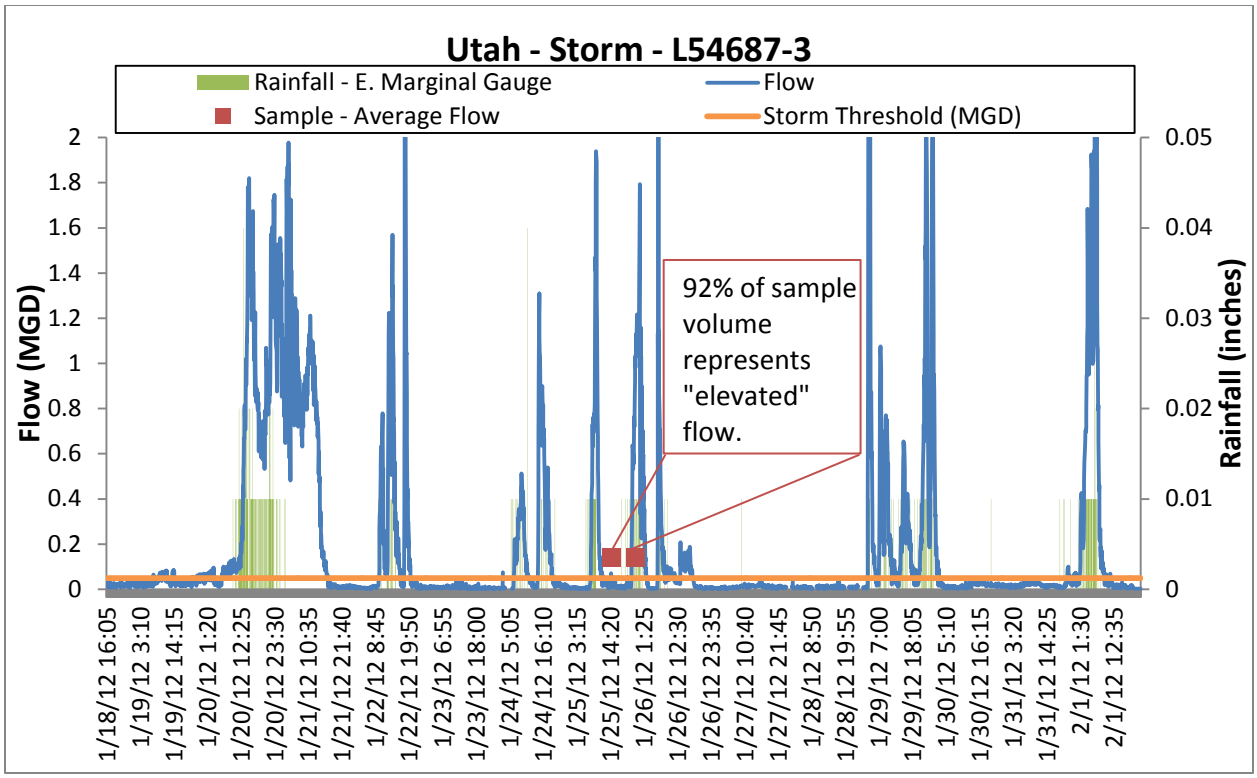


Figure B-11. Hydrograph at Utah from 1/18/12 to 2/1/12, storm sample L54687-3.

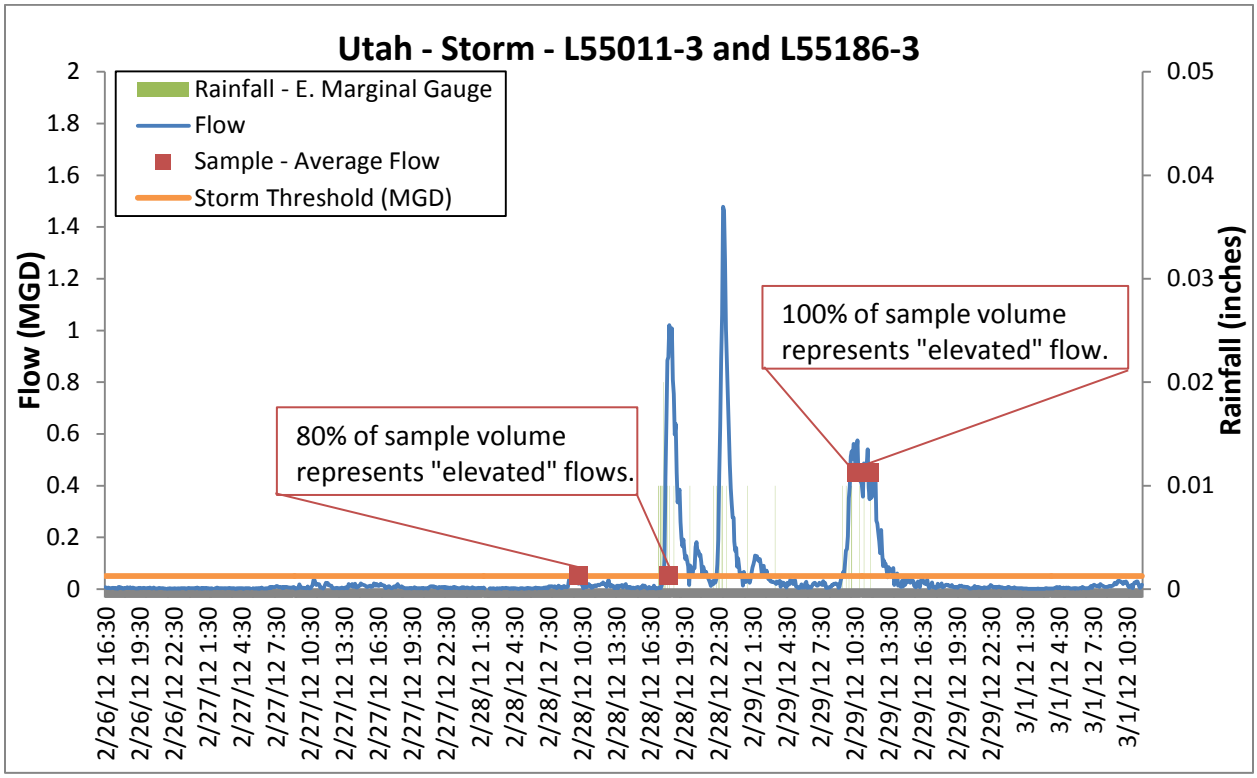


Figure B-12. Hydrograph at Utah from 2/26/12 to 3/1/12, storm samples L55011-3 and L55186-3.

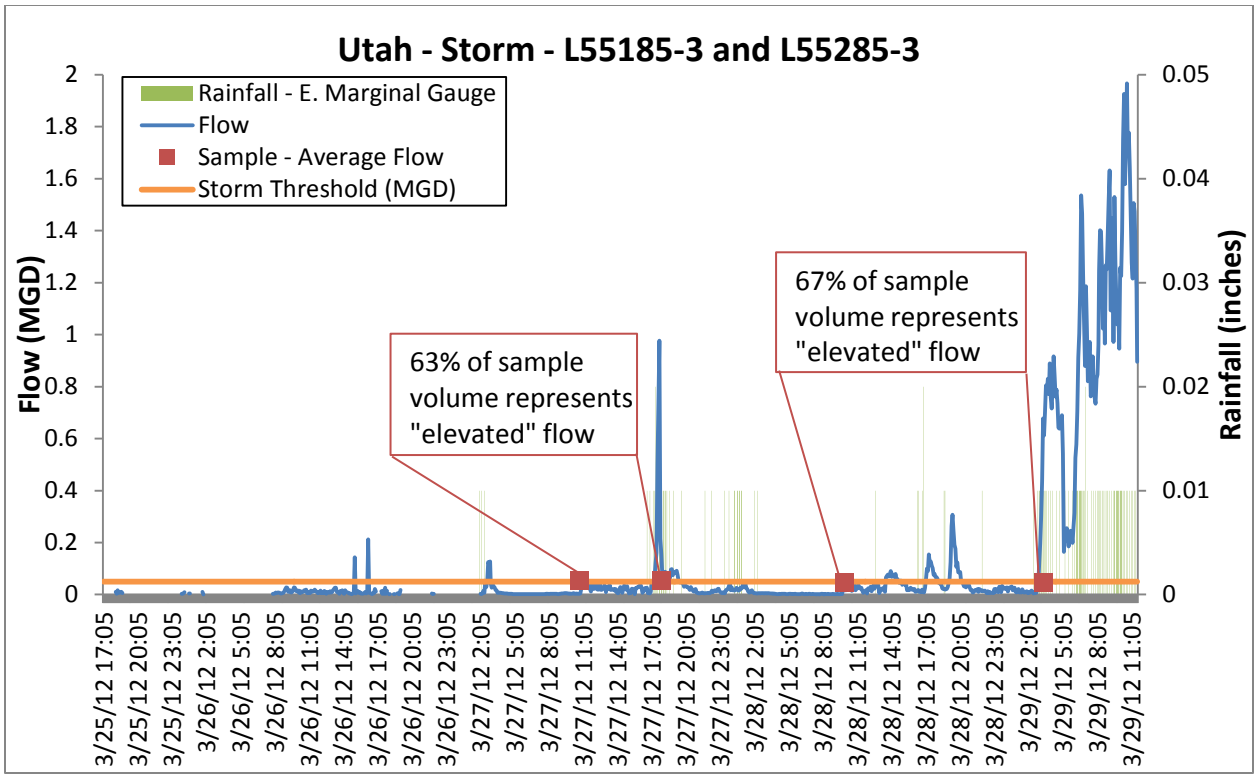


Figure B-13. Hydrograph at Utah from 3/25/12 to 3/29/12, storm samples L55185-3 and L55285-3.

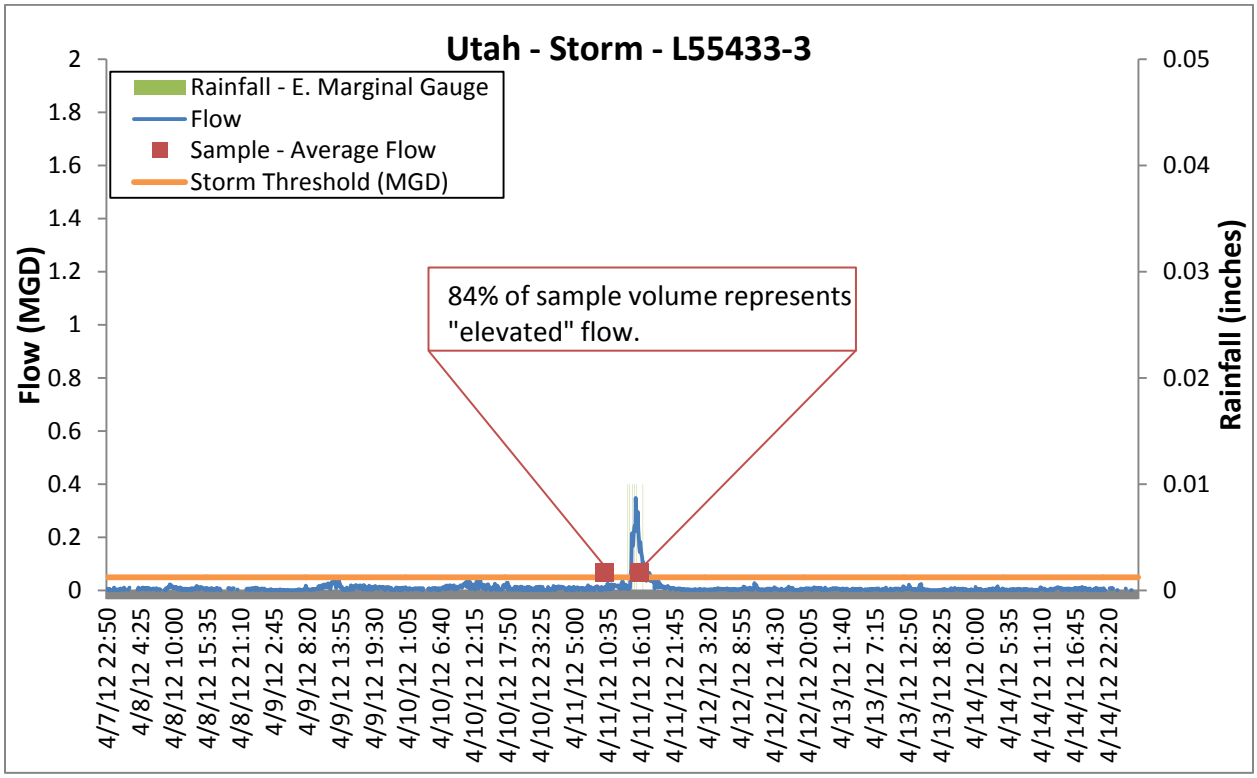


Figure B-14. Hydrograph at Utah from 4/7/12 to 4/14/12, storm sample L55433-3.

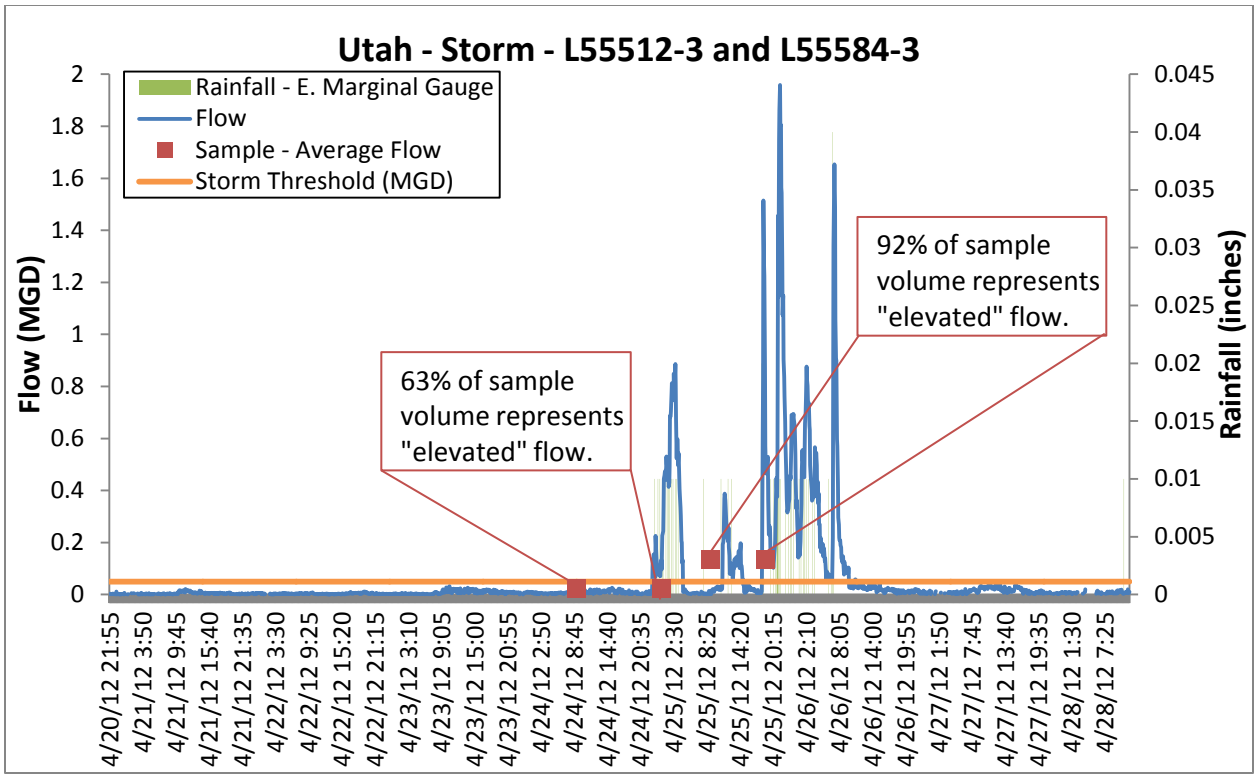


Figure B-15. Hydrograph at Utah from 4/20/12 to 4/28/12, storm samples L55512-3 and L55584-3.

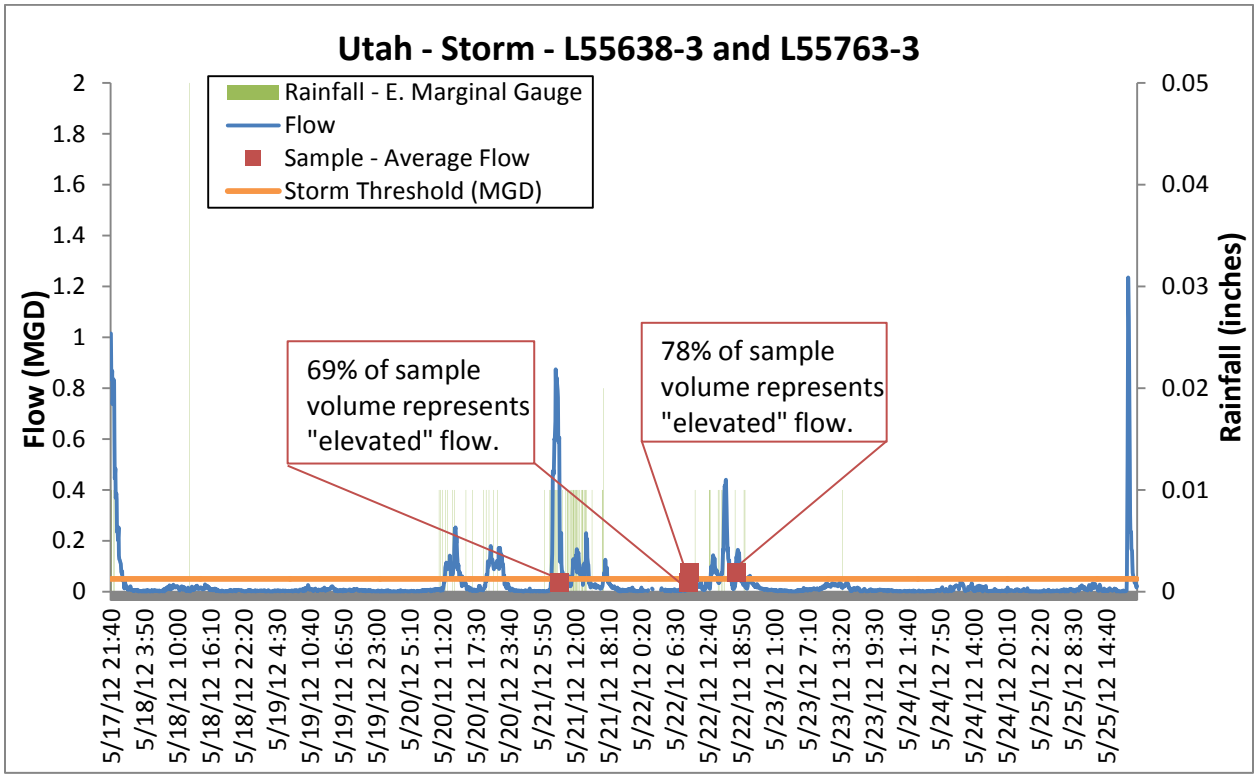


Figure B-16. Hydrograph at Utah from 5/17/12 to 5/25/12, storm samples L55638-3 and L55763-3.

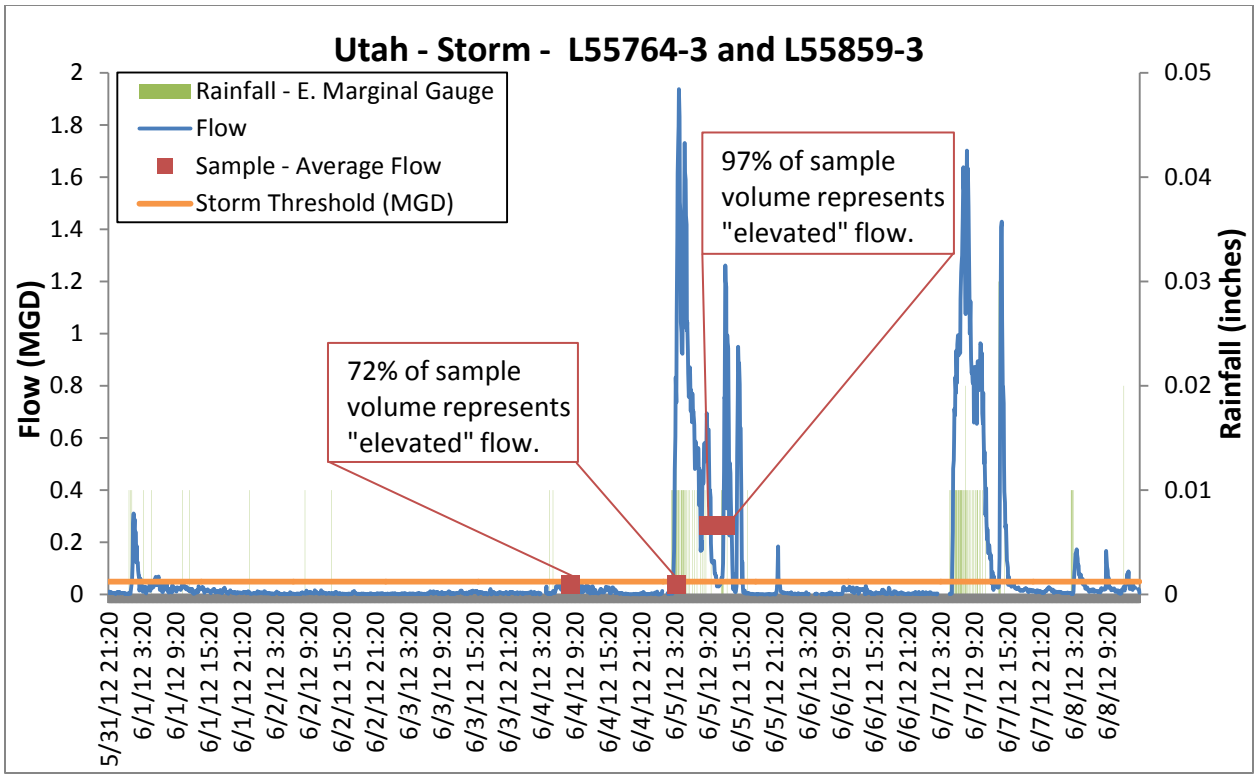


Figure B-17. Hydrograph at Utah from 5/31/12 to 6/8/12, storm samples L55764-3 and L55859-3.

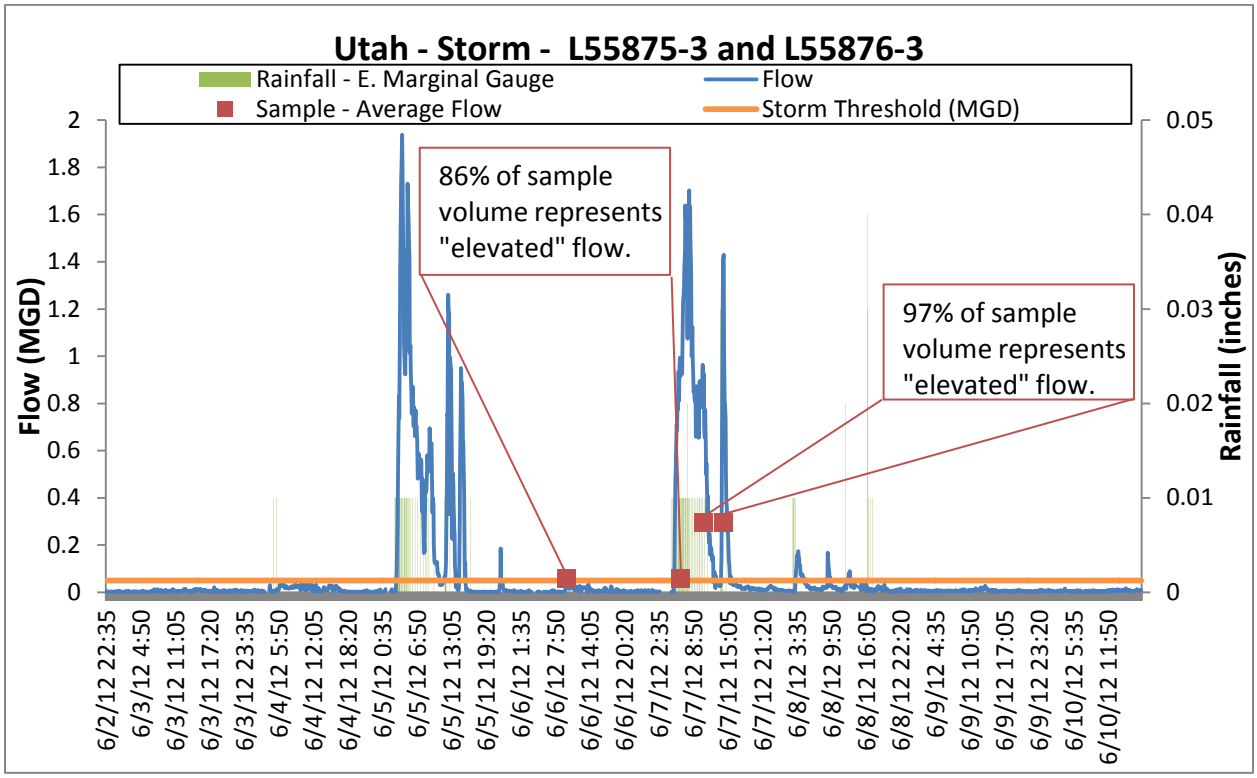


Figure B-18. Hydrograph at Utah from 6/2/12 to 6/10/12, storm samples L55875-3 and L55876-3.

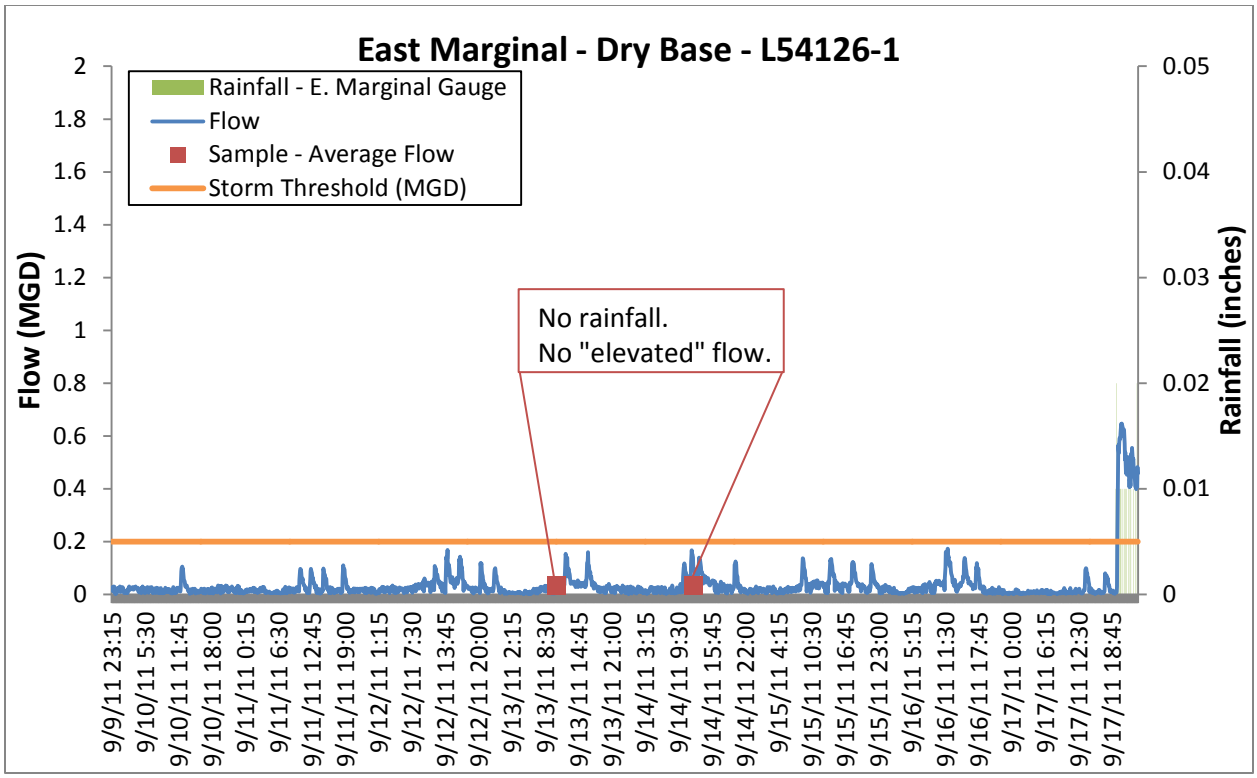


Figure B-19. Hydrograph at East Marginal from 9/9/11 to 9/17/11, dry baseflow sample L54126-1.

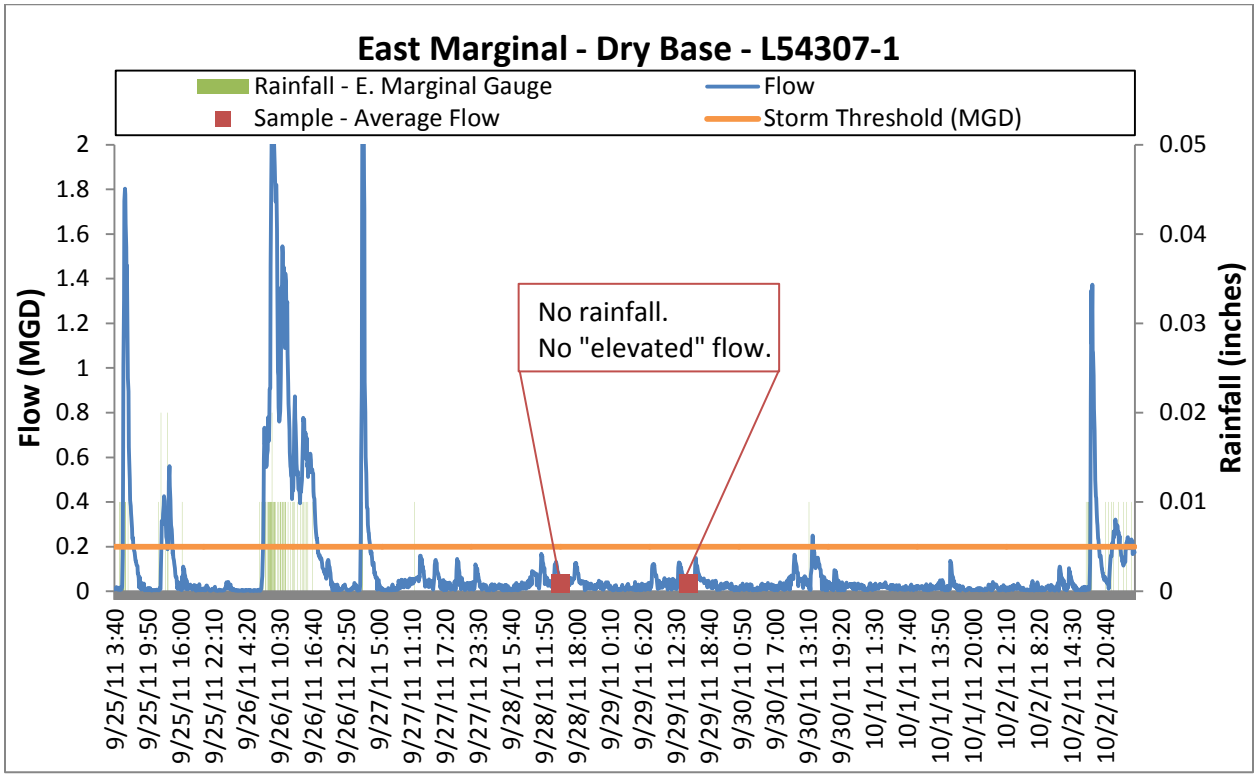


Figure B-20. Hydrograph at East Marginal from 9/25/11 to 10/2/11, dry baseflow sample L54307-1.

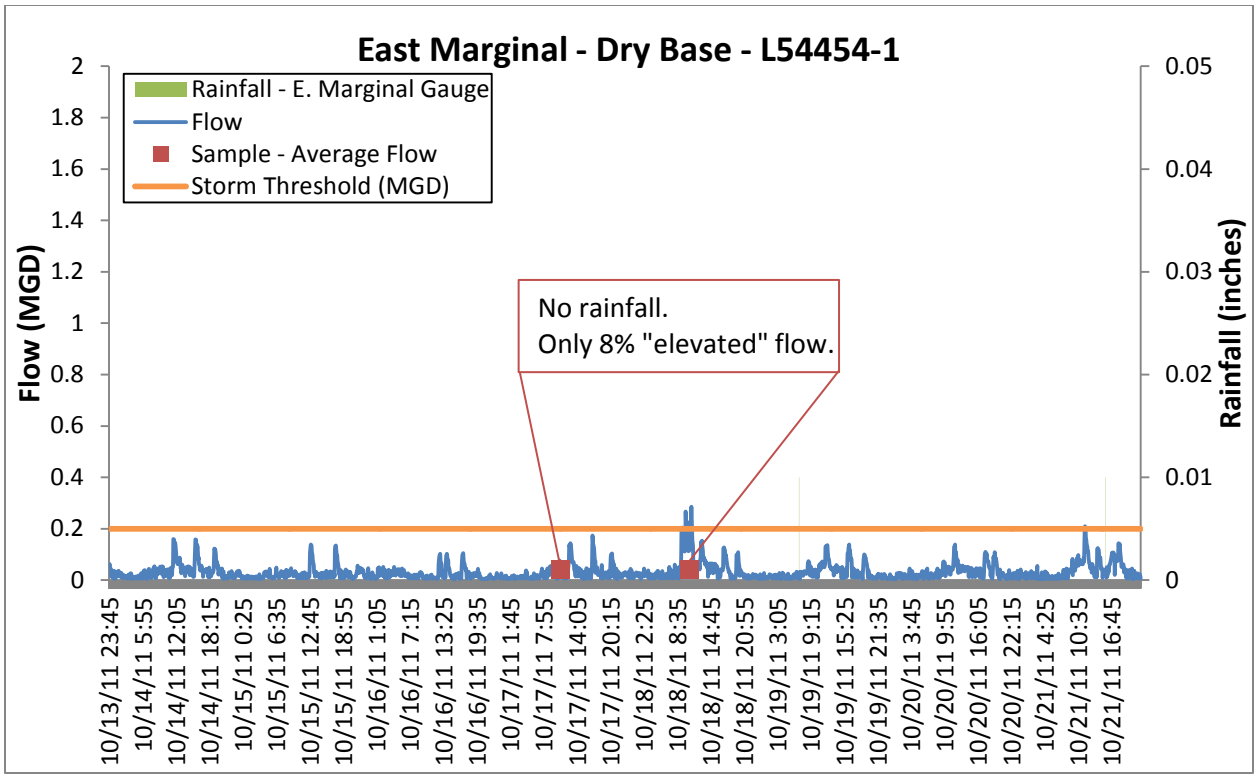


Figure B-21. Hydrograph at East Marginal from 10/13/11 to 10/21/11, dry baseflow sample L54454-1.

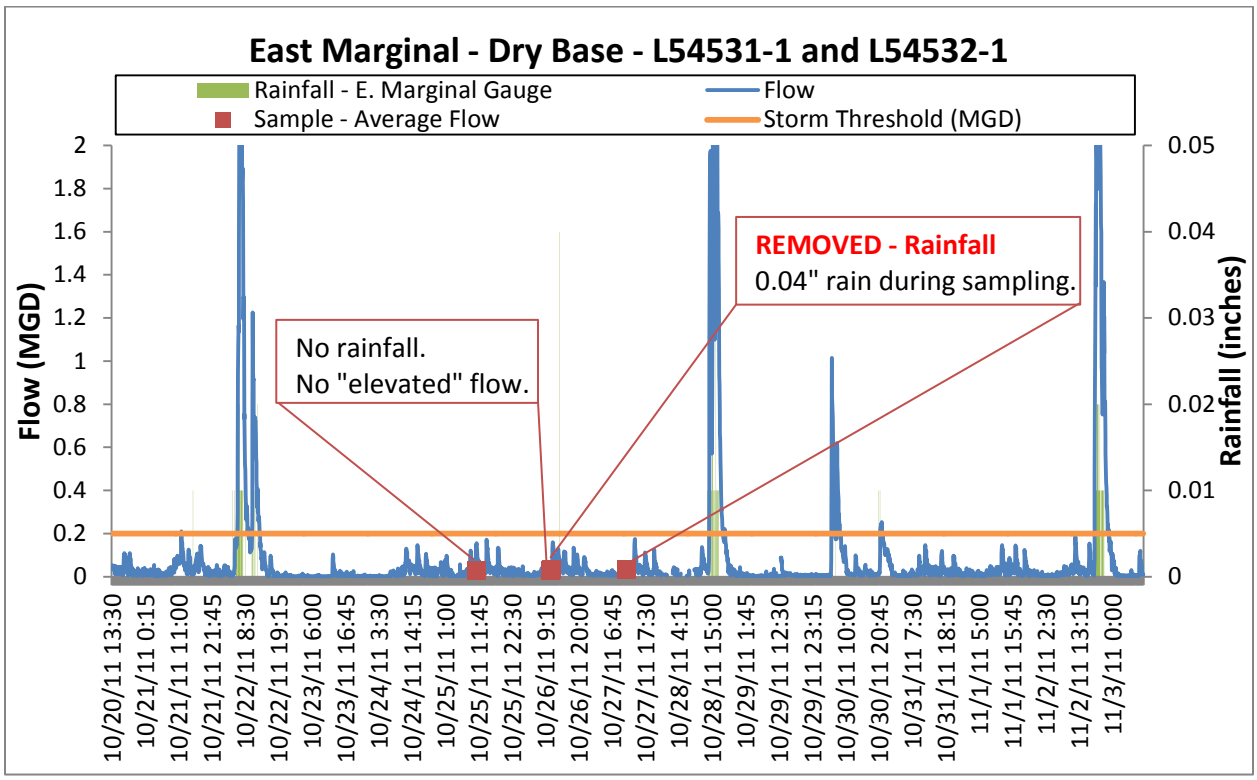


Figure B-22. Hydrograph at East Marginal from 10/20/11 to 11/3/11, dry baseflow samples L54531-1 and L54532-1.

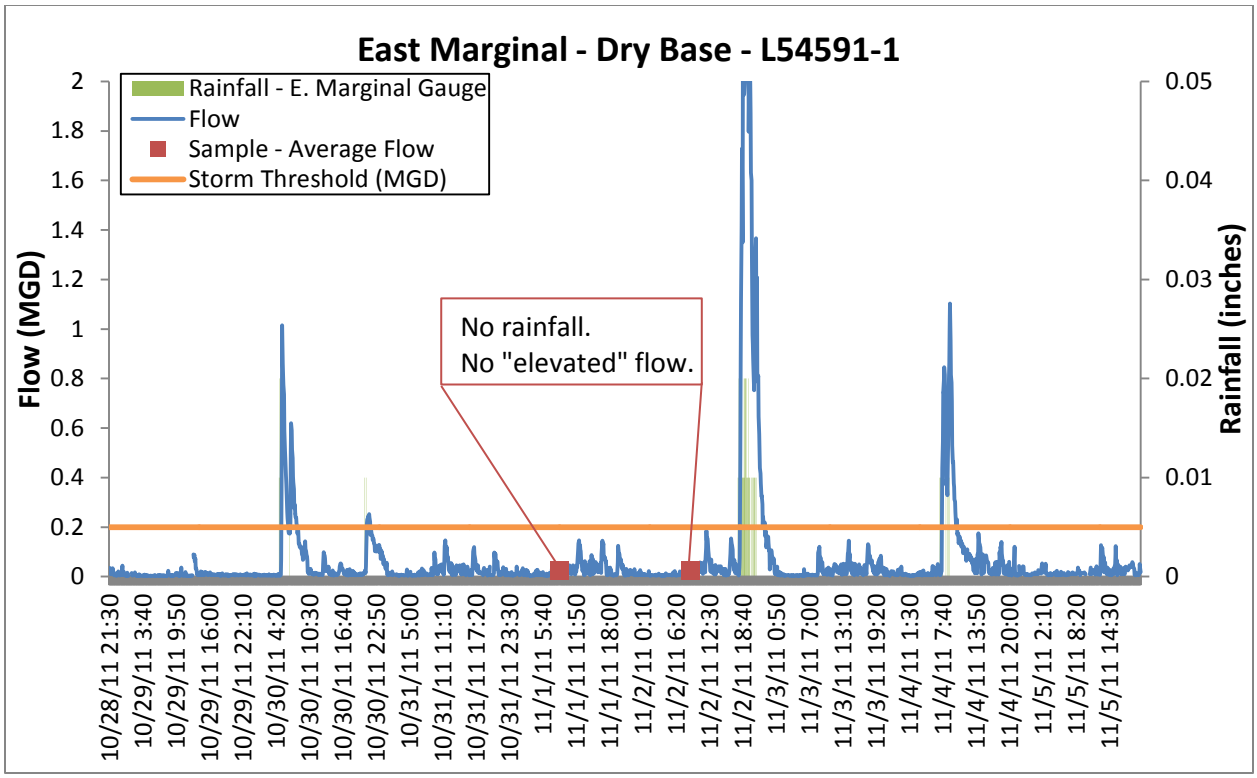


Figure B-23. Hydrograph at East Marginal from 10/28/11 to 11/5/11, dry baseflow sample L54591-1.

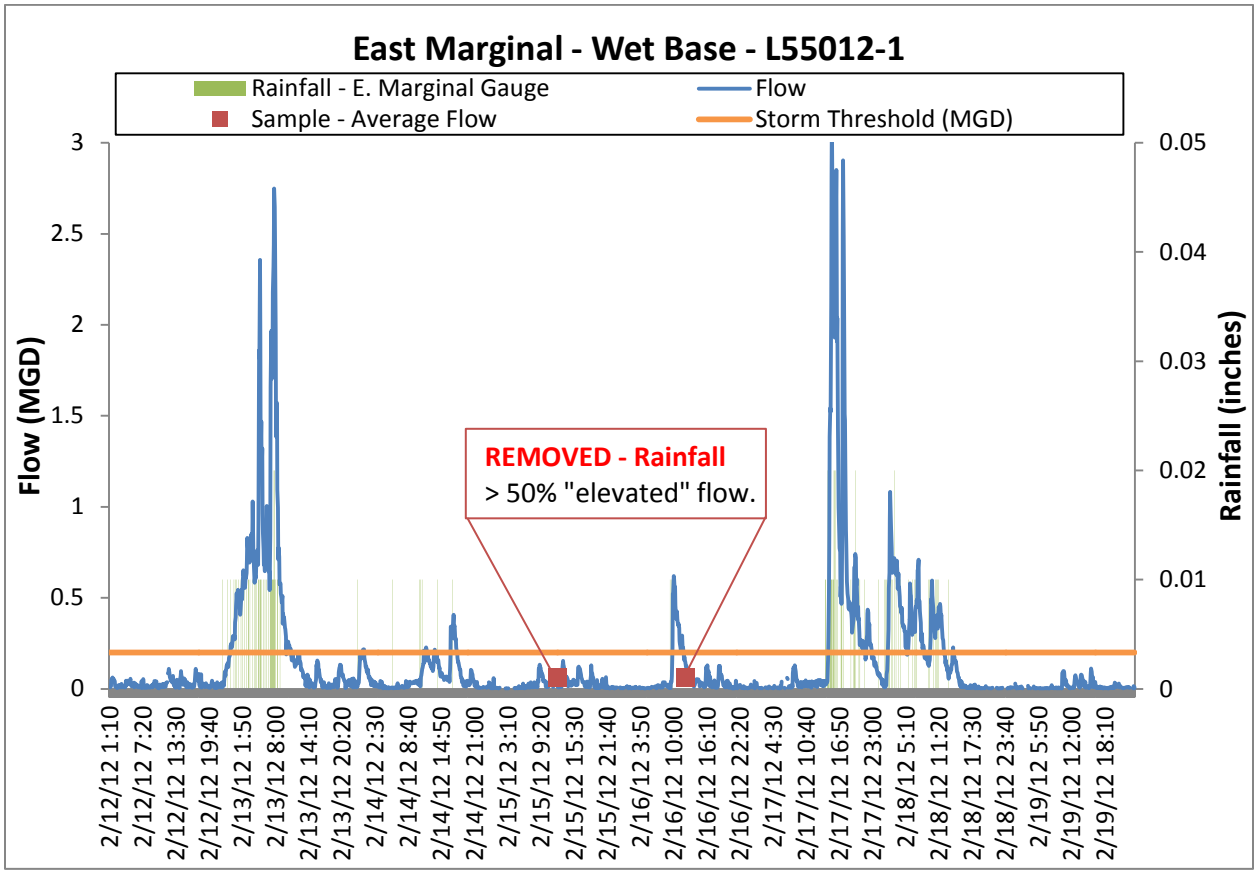


Figure B-24. Hydrograph at East Marginal from 2/12/12 to 2/19/12, wet baseflow sample L55012-1.

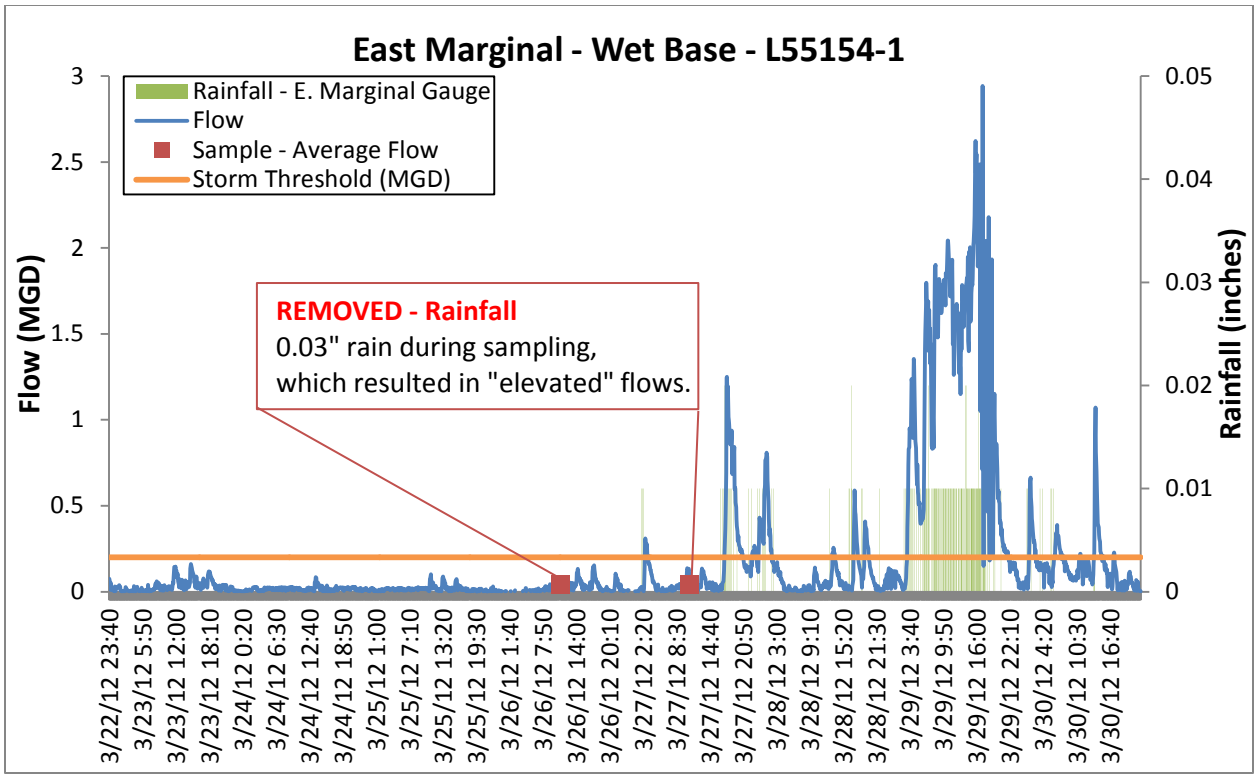


Figure B-25. Hydrograph at East Marginal from 3/22/12 to 3/30/12, wet baseflow sample L55154-1.

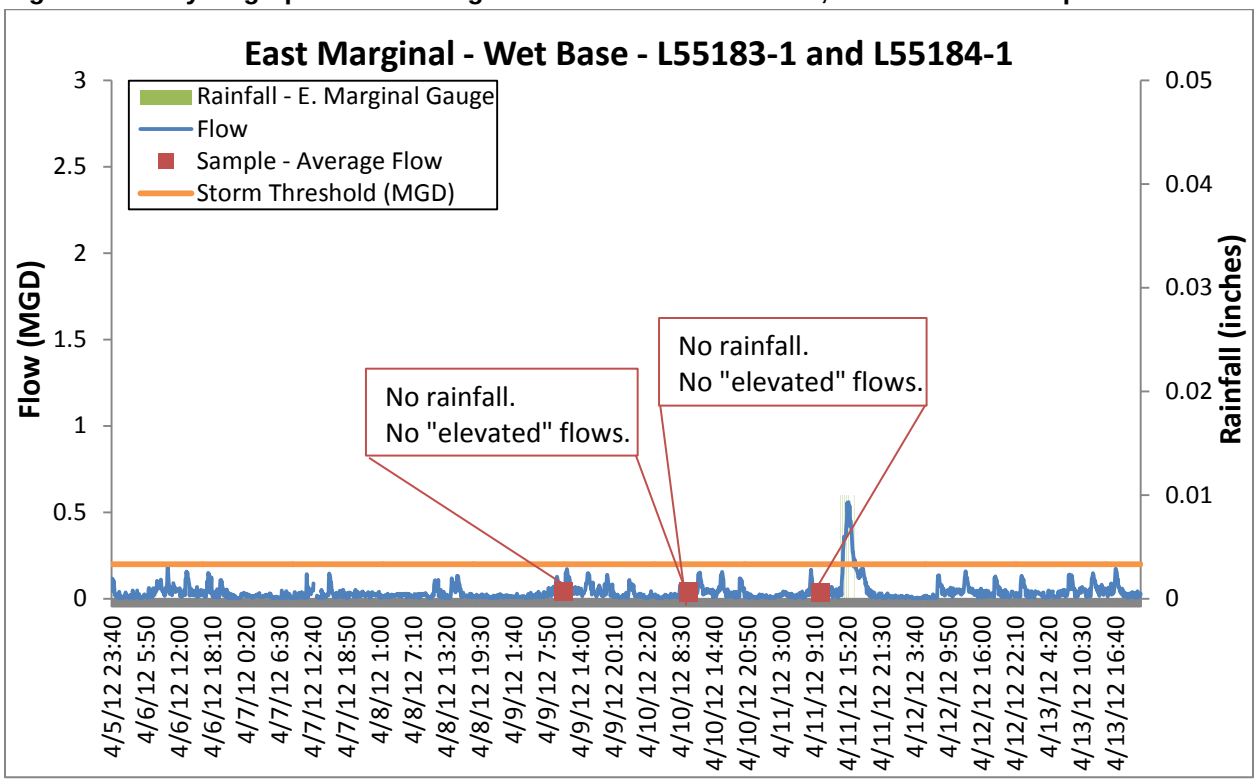


Figure B-26. Hydrograph at East Marginal from 4/5/12 to 4/13/12, wet baseflow samples L55183-1 and L55184-1.

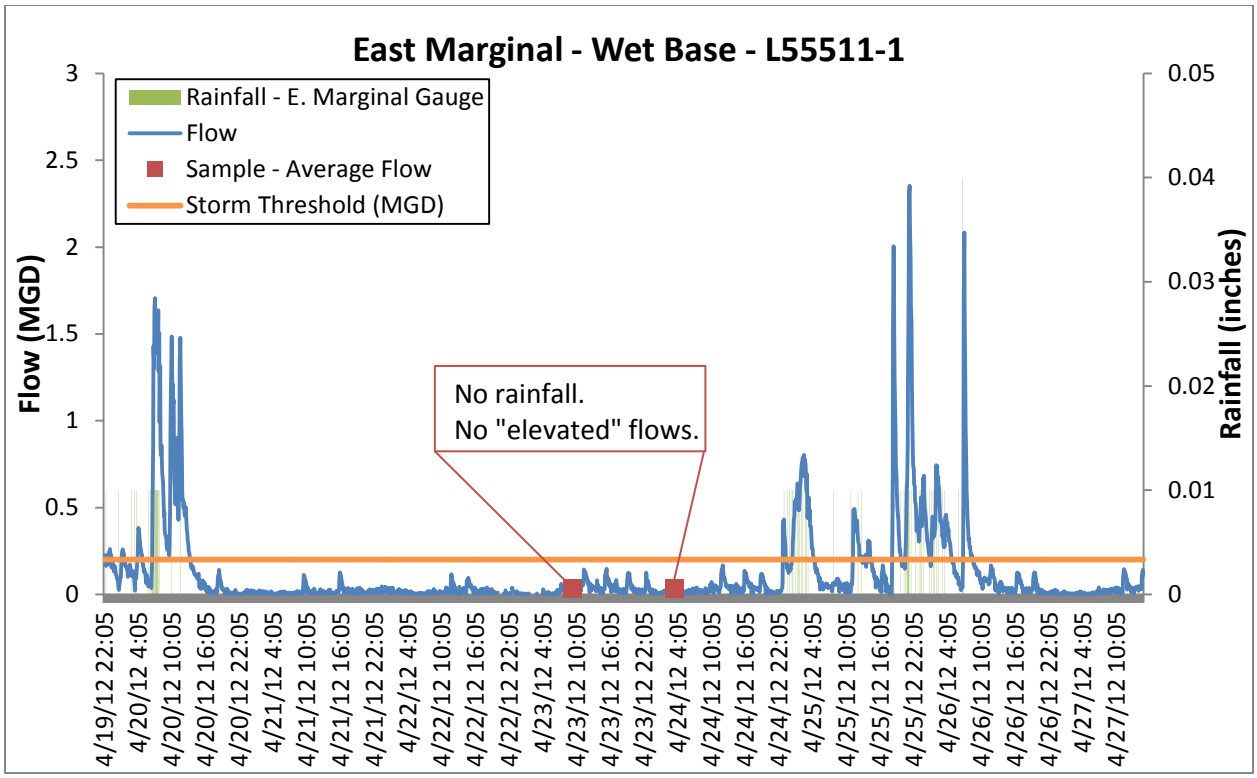


Figure B-27. Hydrograph at East Marginal from 4/19/12 to 4/27/12, wet baseflow sample L55511-1.

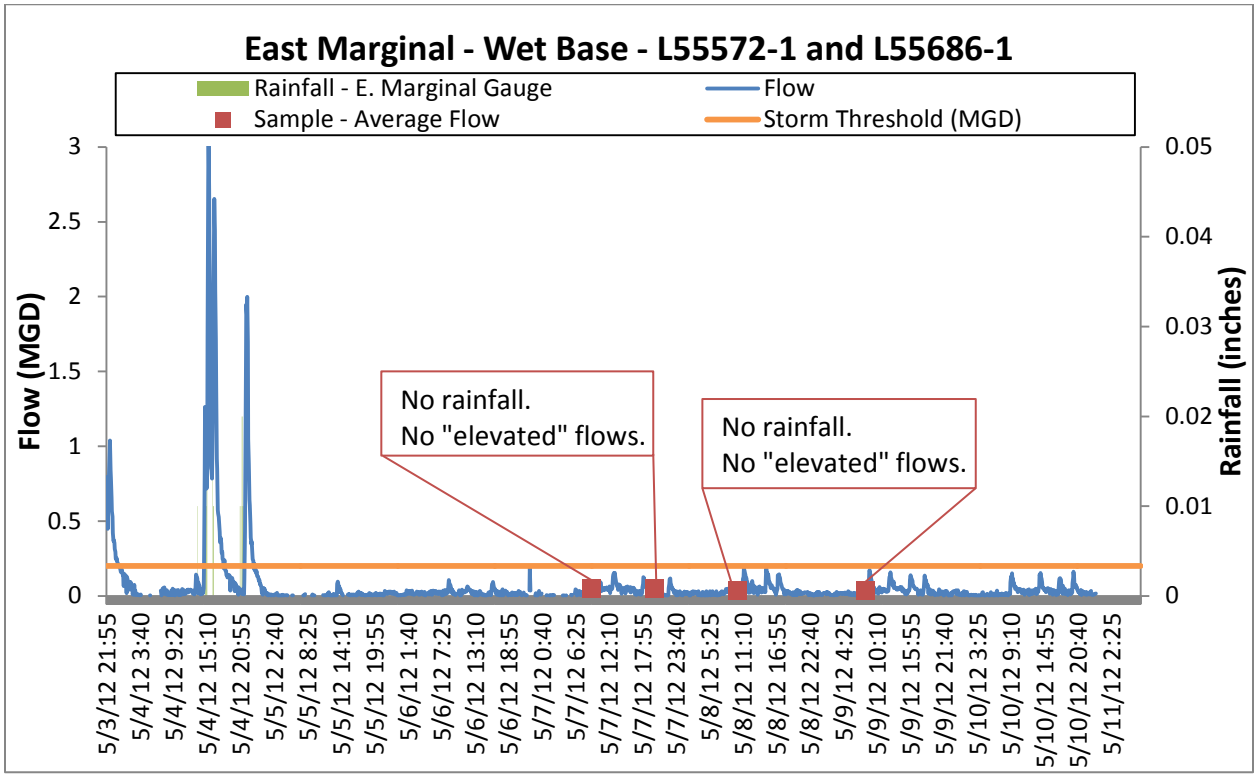


Figure B-28. Hydrograph at East Marginal from 5/3/12 to 5/11/12, wet baseflow samples L55572-1 and L55686-1.

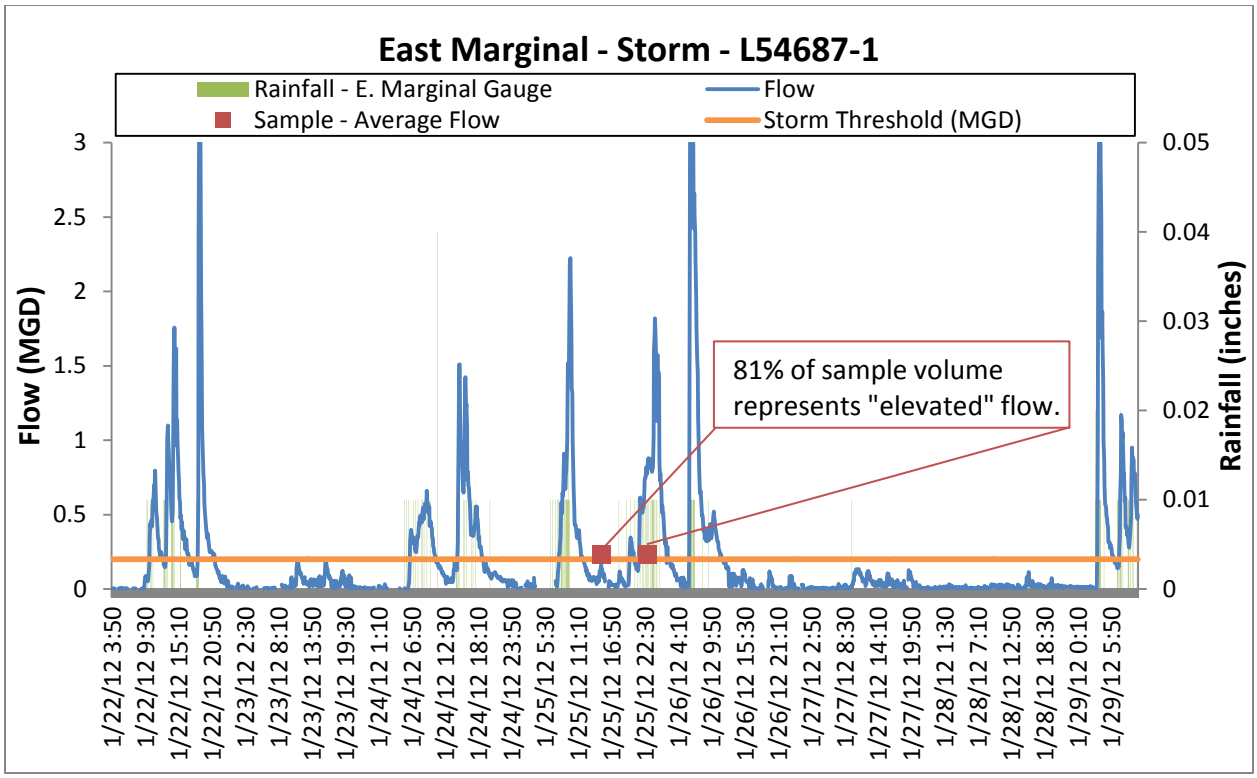


Figure B-29. Hydrograph at East Marginal from 1/22/12 to 1/29/12, storm sample L54687-1.

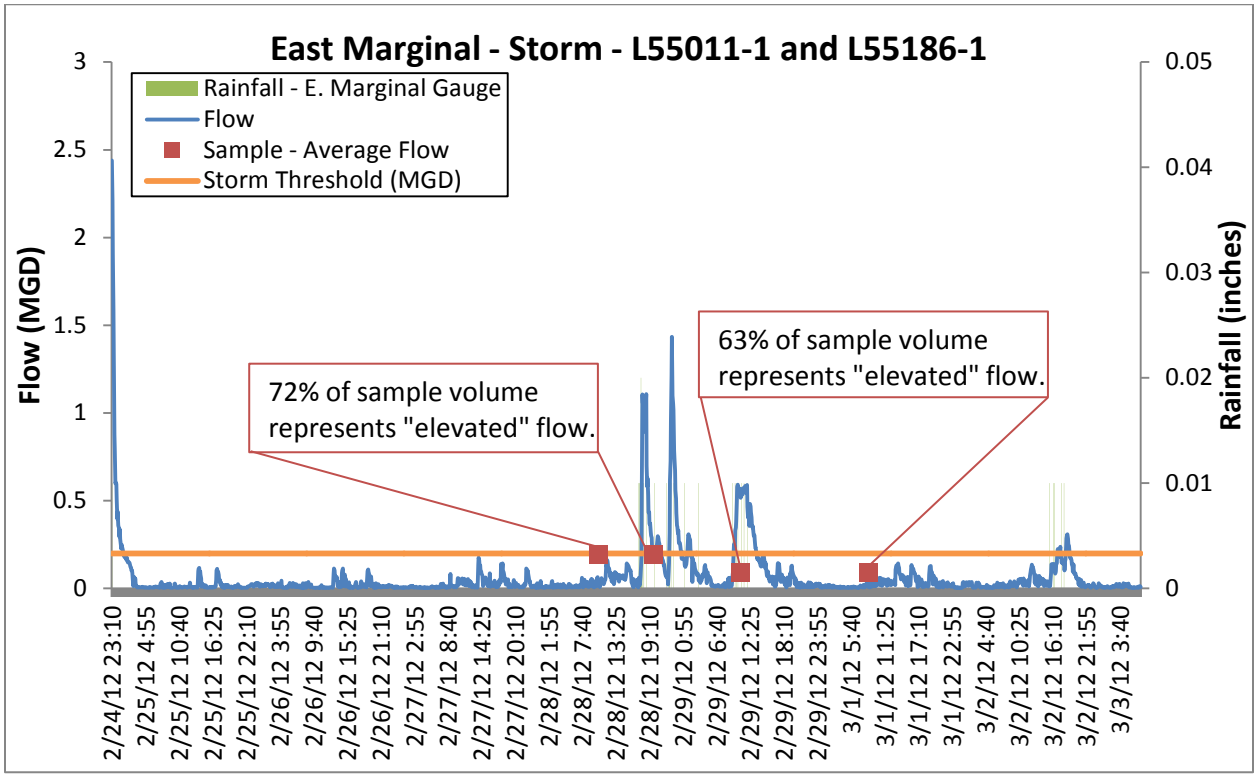


Figure B-30. Hydrograph at East Marginal from 2/24/12 to 3/3/12, storm samples L55011-1 and L55186-1.

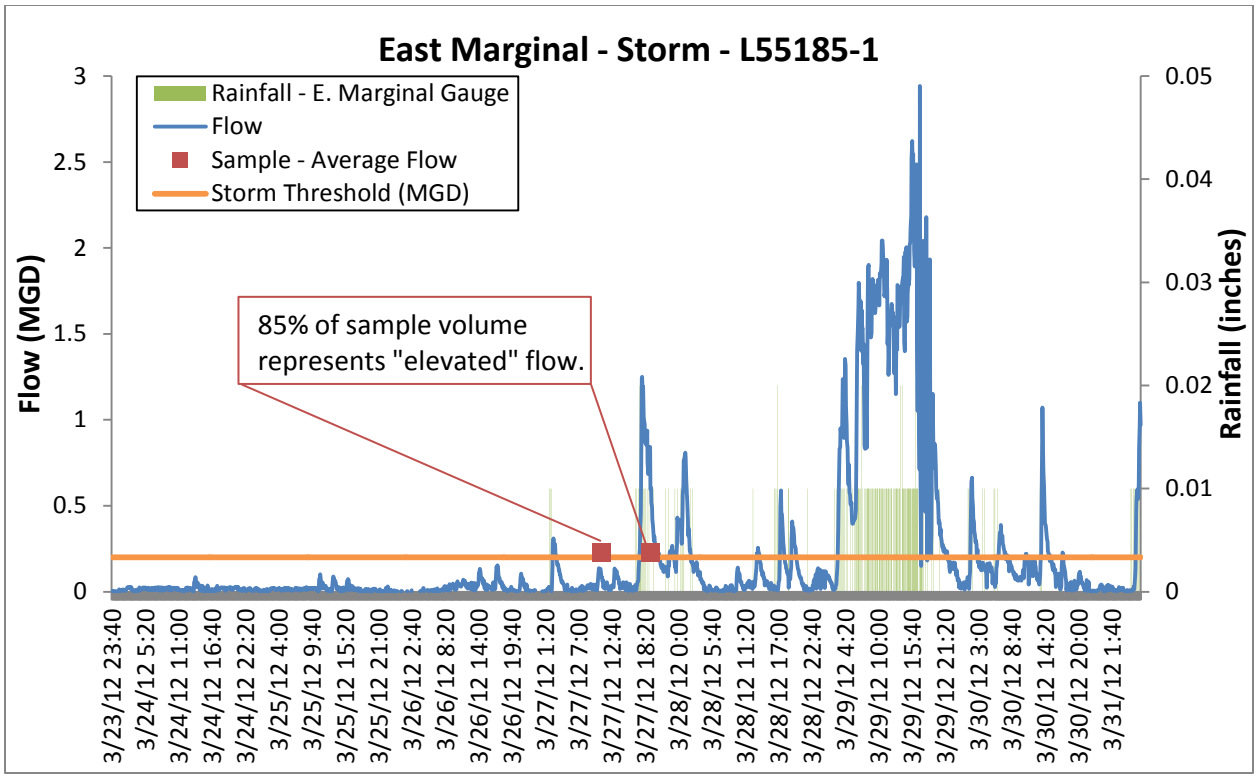


Figure B-31. Hydrograph at East Marginal from 3/23/12 to 3/31/12, storm sample L55185-1.

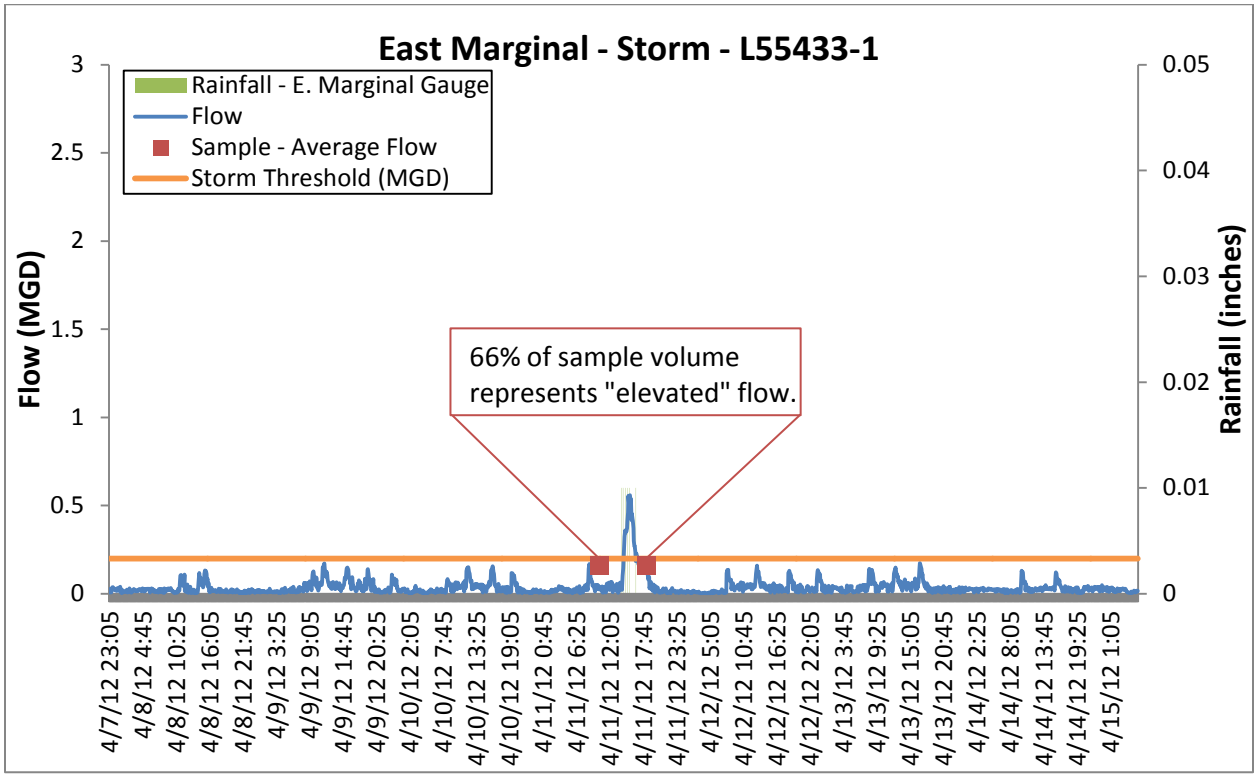


Figure B-32. Hydrograph at East Marginal from 4/7/12 to 4/15/12, storm sample L55433-1.

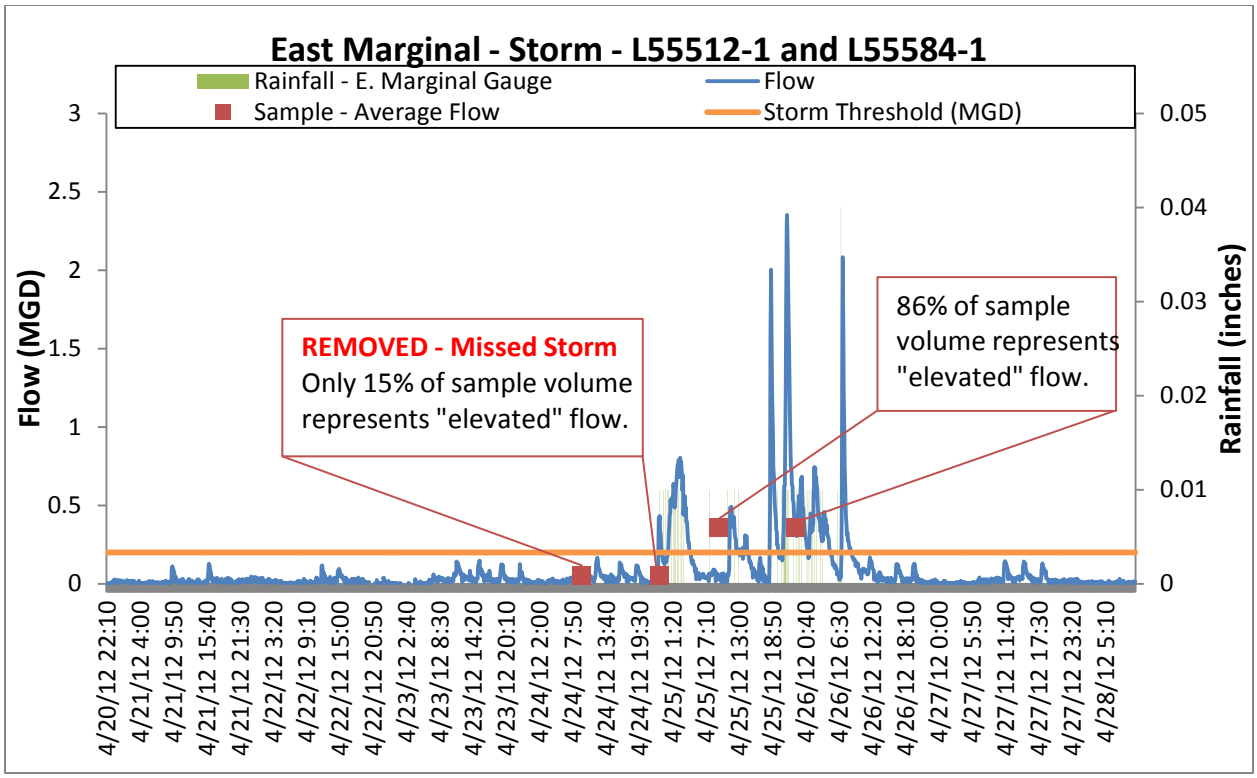


Figure B-33. Hydrograph at East Marginal from 4/20/12 to 4/28/12, storm samples L55512-1 and L55584-1.

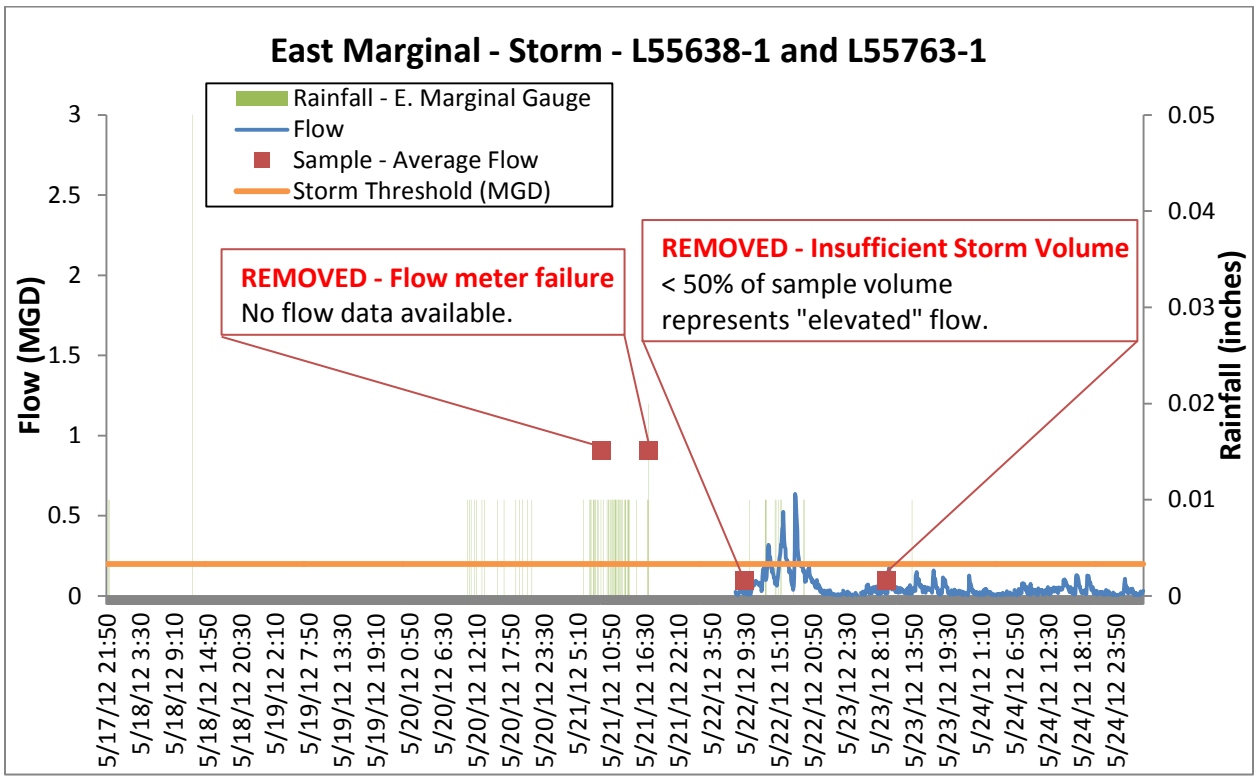


Figure B-34. Hydrograph at East Marginal from 5/17/12 to 5/25/12, storm samples L55638-1 and L55763-1.

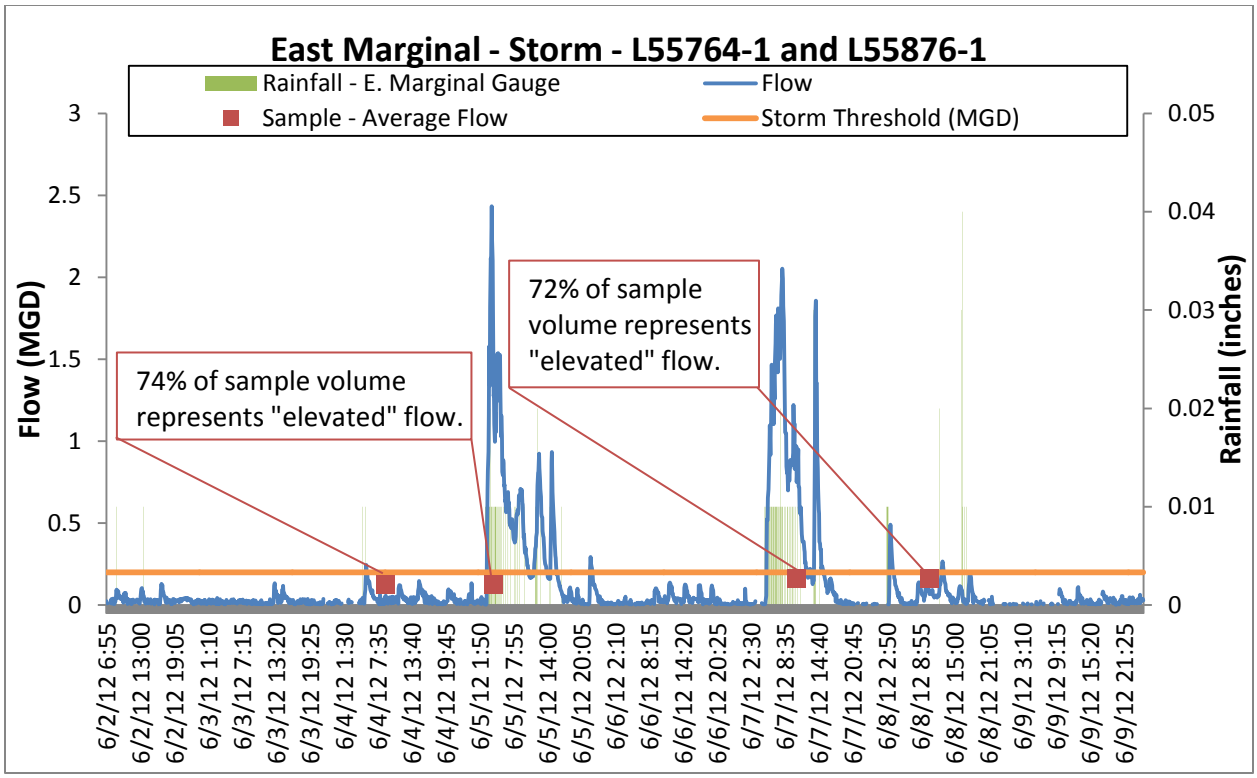


Figure B-35. Hydrograph at East Marginal from 6/2/12 to 6/9/12, storm samples L55764-1 and L55876-1.

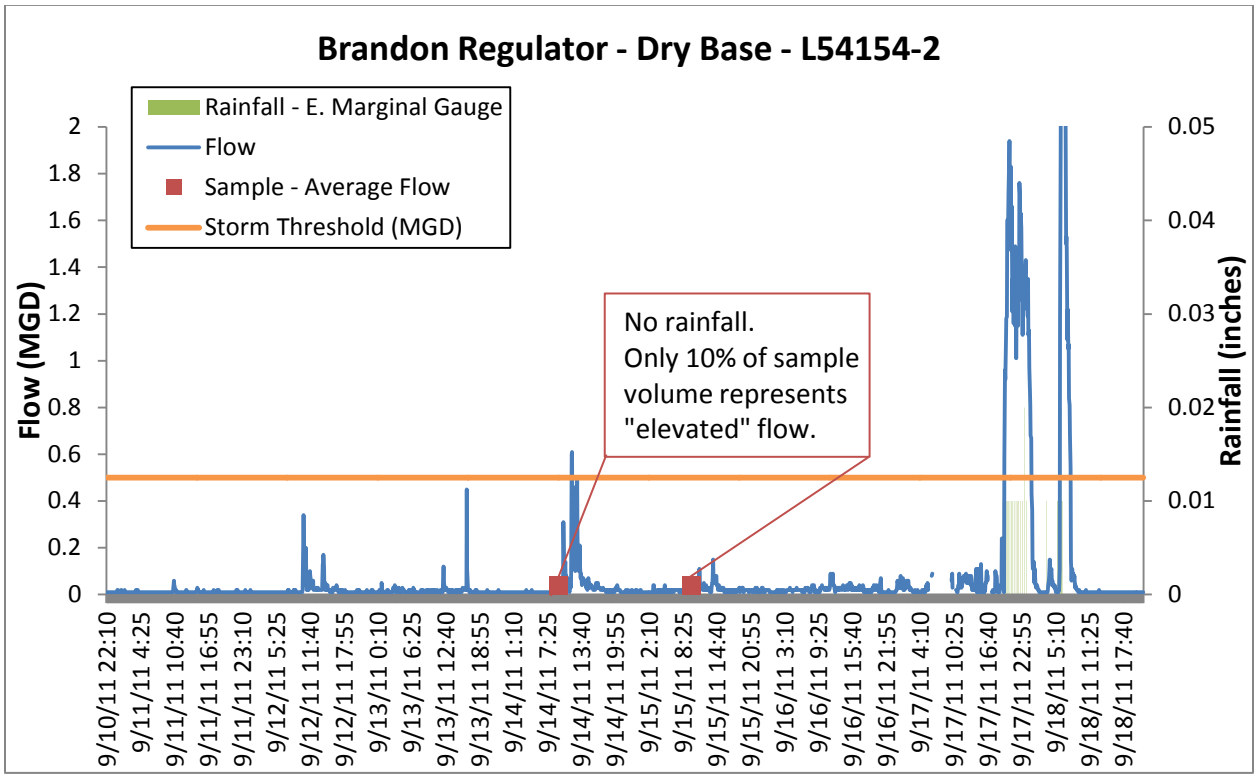


Figure B-36. Hydrograph at Brandon Regulator from 9/10/11 to 9/18/11, dry baseflow sample L54154-2.

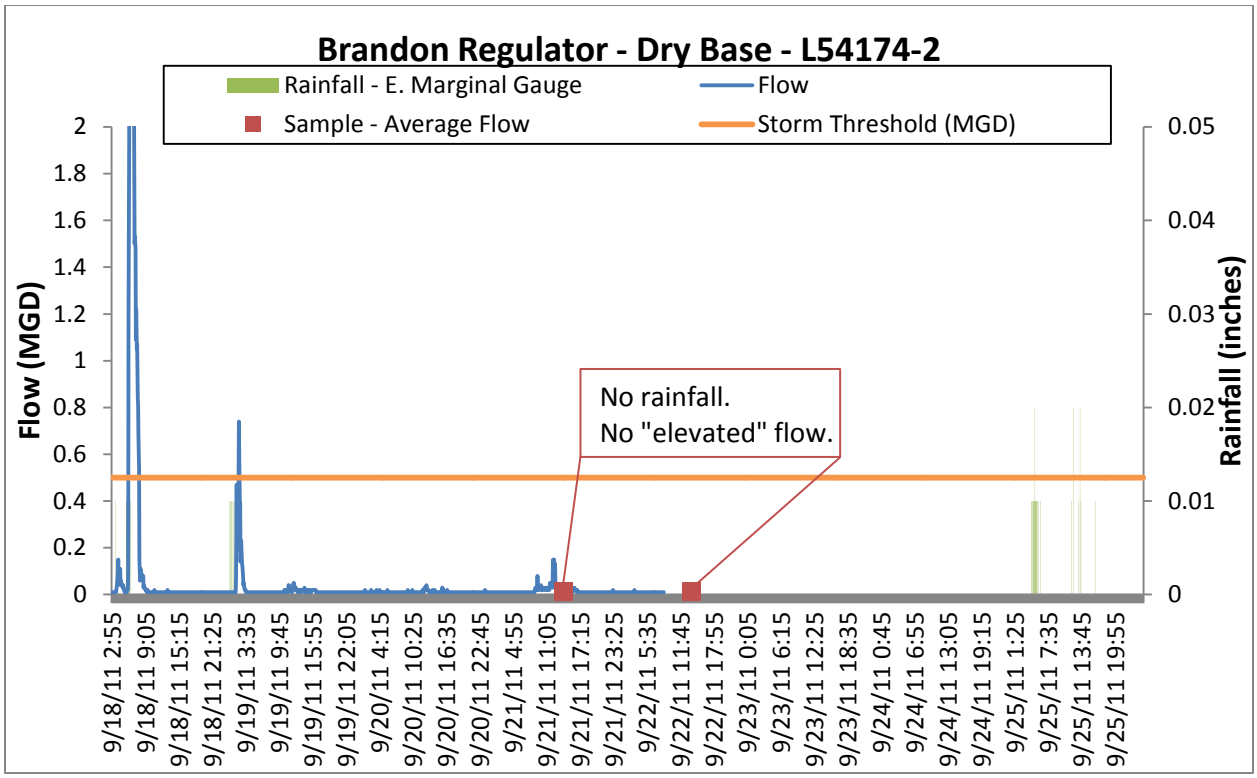


Figure B-37. Hydrograph at Brandon Regulator from 9/18/11 to 9/25/11, dry baseflow sample L54174-2.

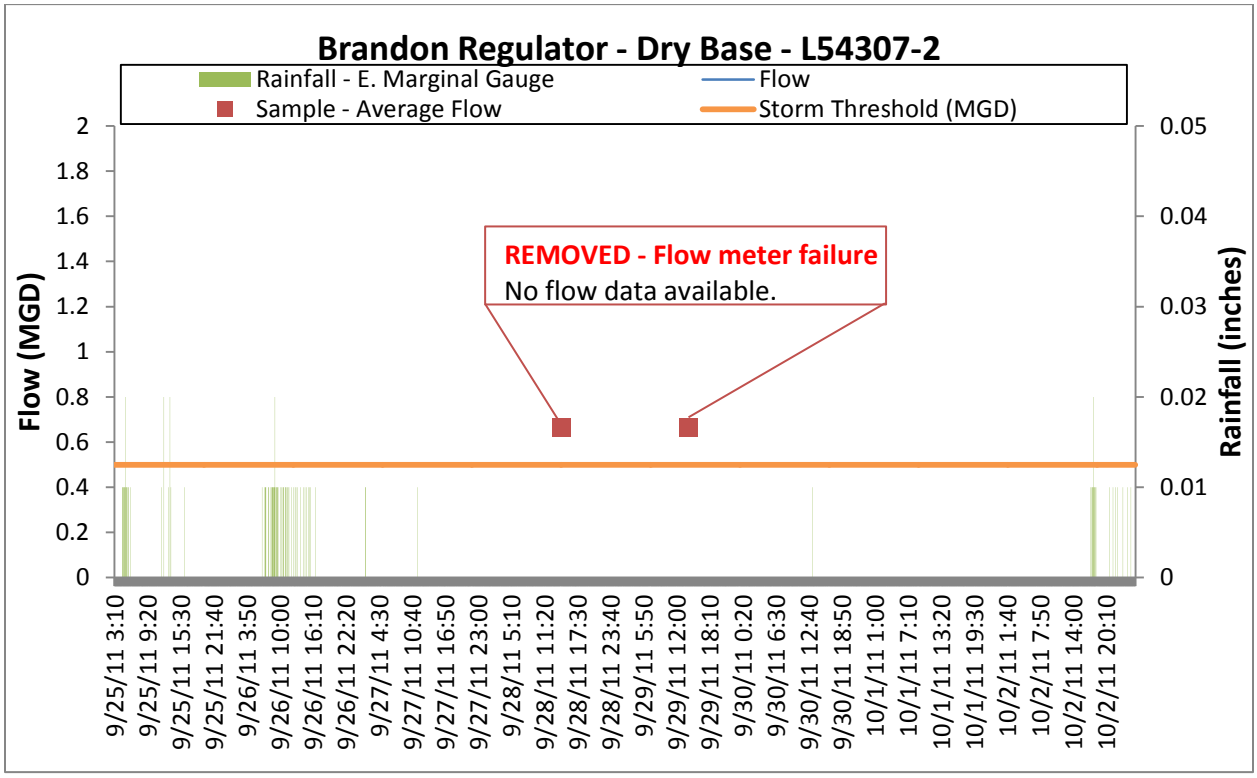


Figure B-38. Hydrograph at Brandon Regulator from 9/25/11 to 10/2/11, dry baseflow sample L54307-2.

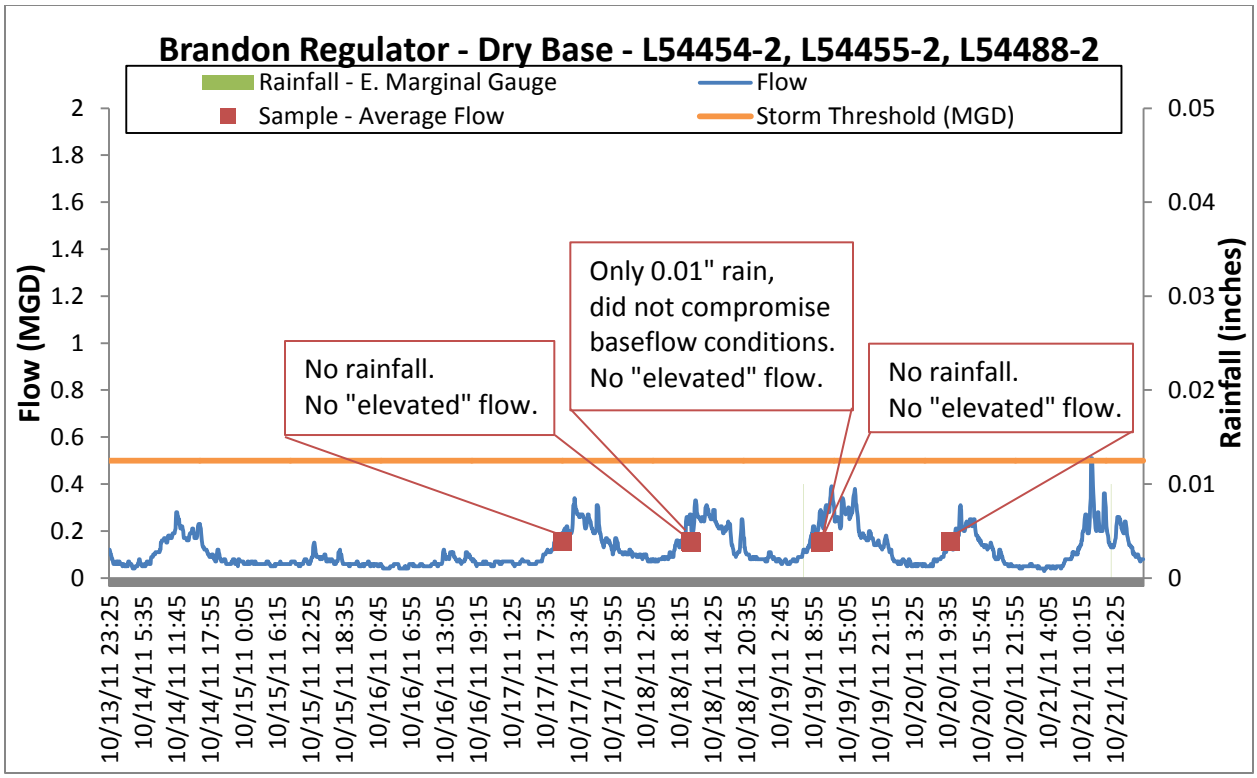


Figure B-39. Hydrograph at Brandon Regulator from 10/13/11 to 10/21/11, dry baseflow samples L54454-2, L54455-2 and L54488-2.

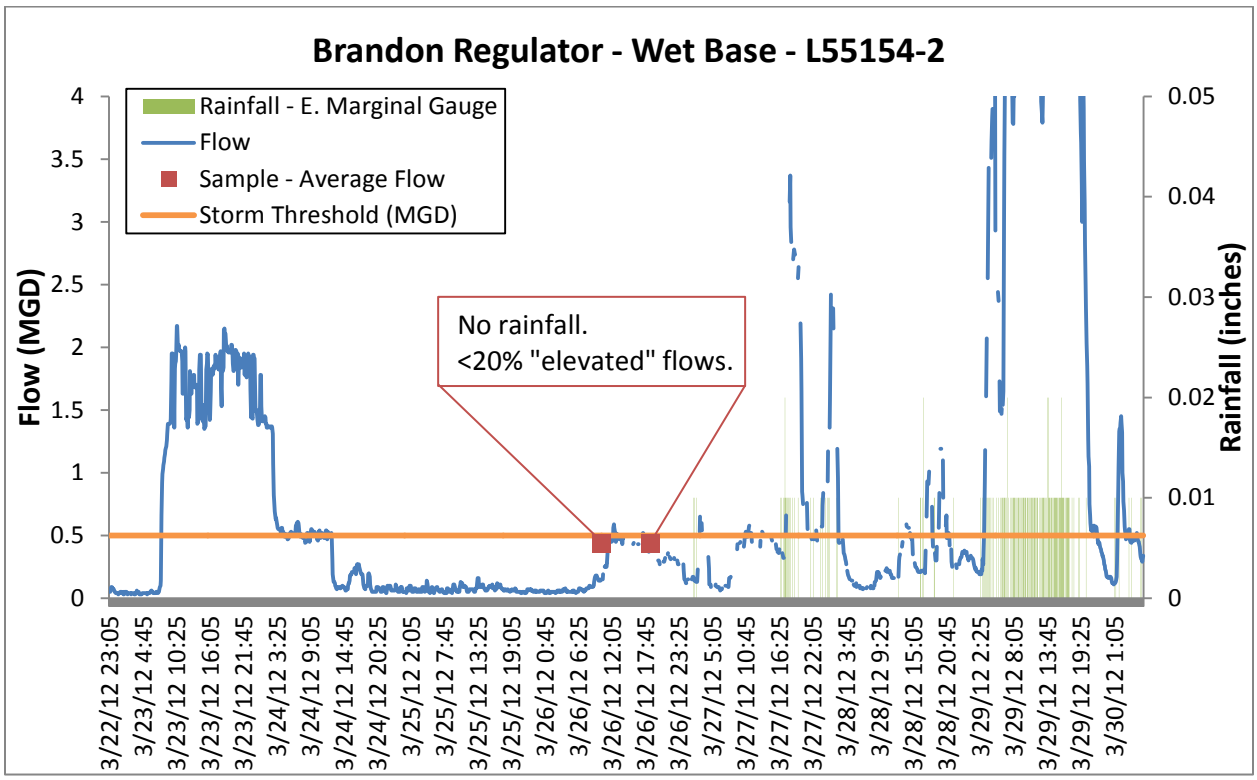


Figure B-40. Hydrograph at Brandon Regulator from 3/22/12 to 3/30/12, wet baseflow sample L55154-2.

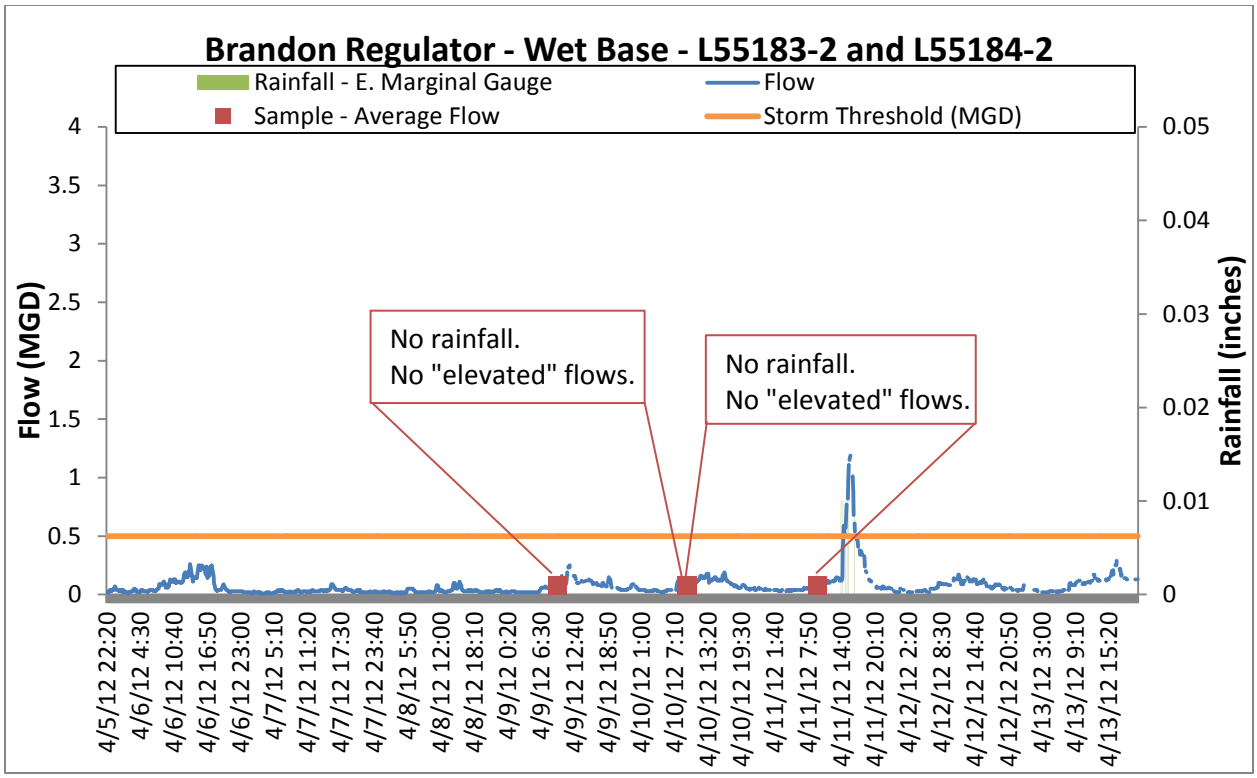


Figure B-41. Hydrograph at Brandon Regulator from 4/5/12 to 4/13/12, wet baseflow samples L55183-2 and L55184-2.

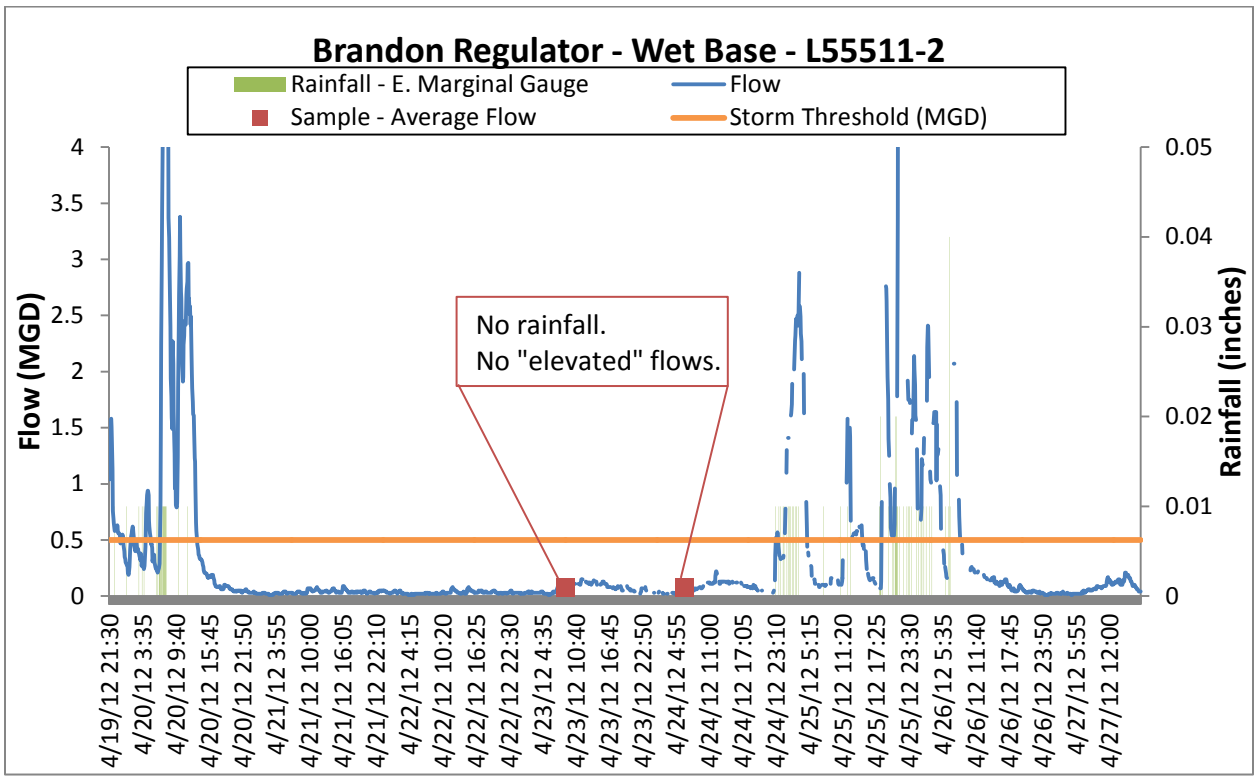


Figure B-42. Hydrograph at Brandon Regulator from 4/19/12 to 4/27/12, wet baseflow sample L55511-2.

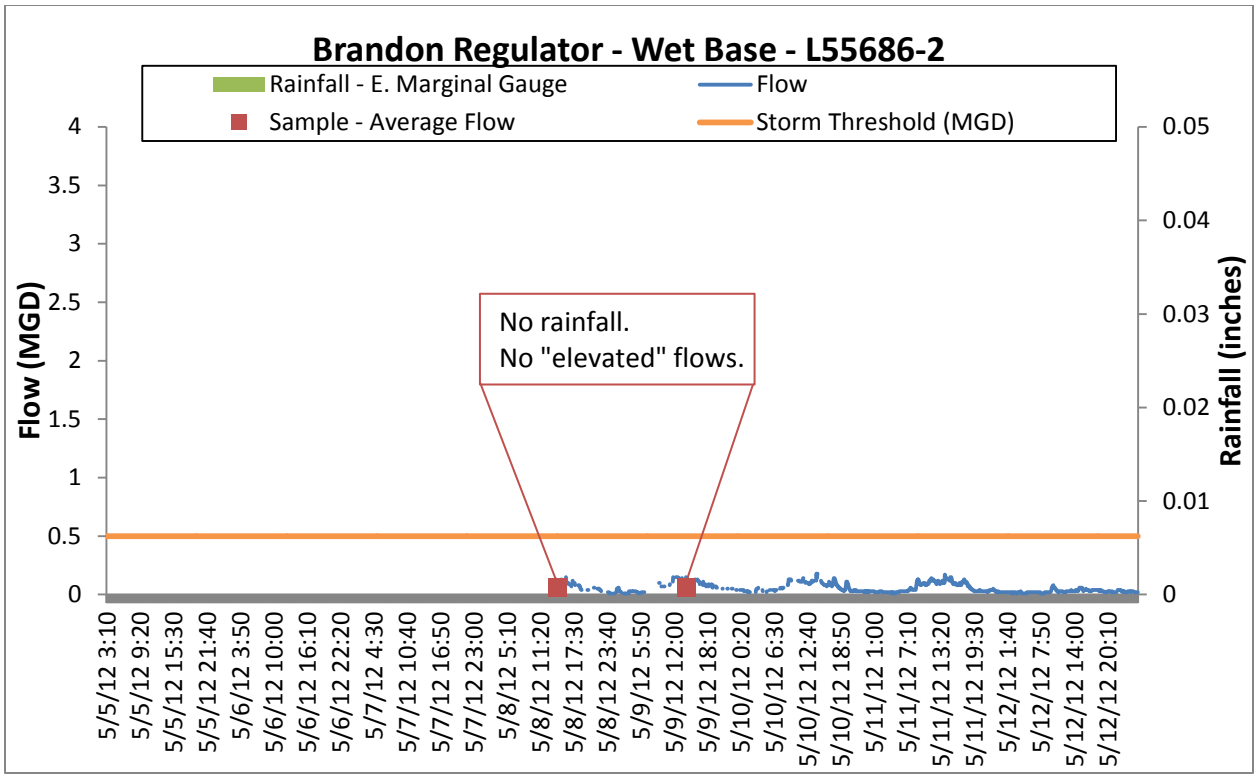


Figure B-43. Hydrograph at Brandon Regulator from 5/5/12 to 5/12/12, wet baseflow sample L55686-2.

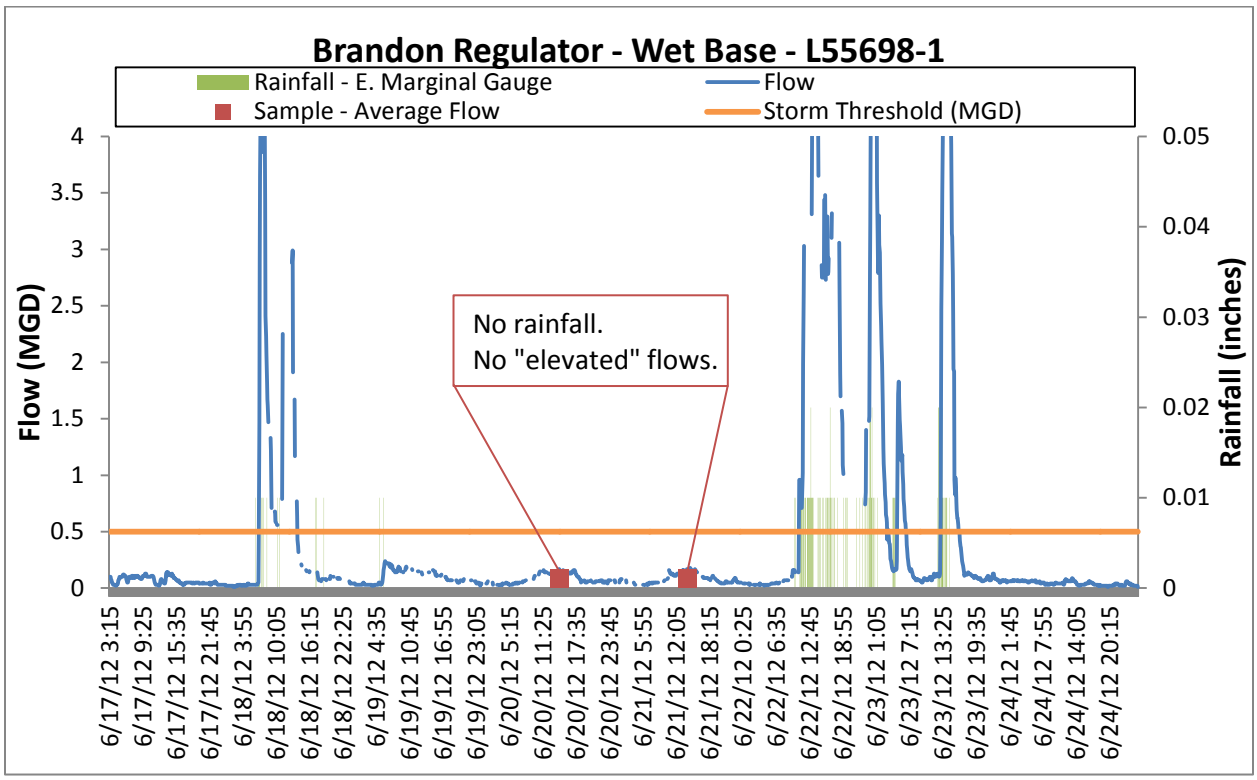


Figure B-44. Hydrograph at Brandon Regulator from 6/17/12 to 6/24/12, wet baseflow sample L55698-1.

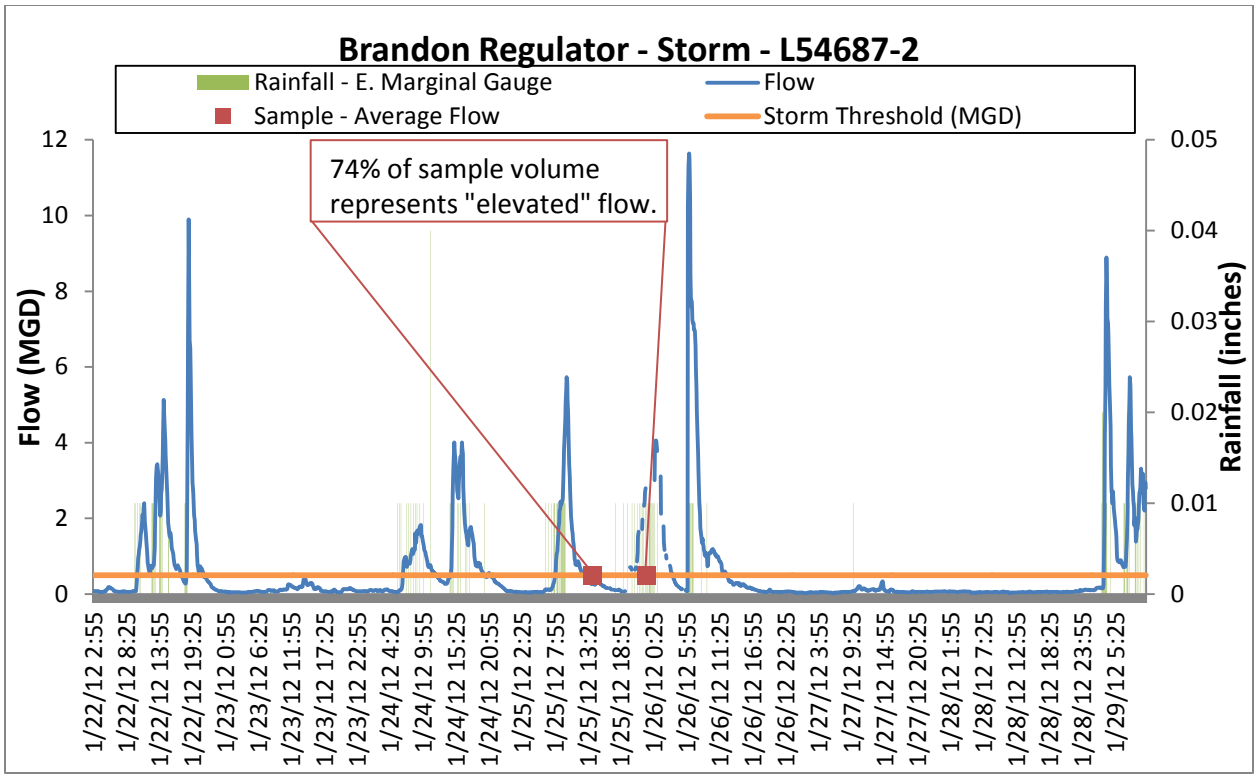


Figure B-45. Hydrograph at Brandon Regulator from 1/22/12 to 1/29/12, storm sample L54687-2.

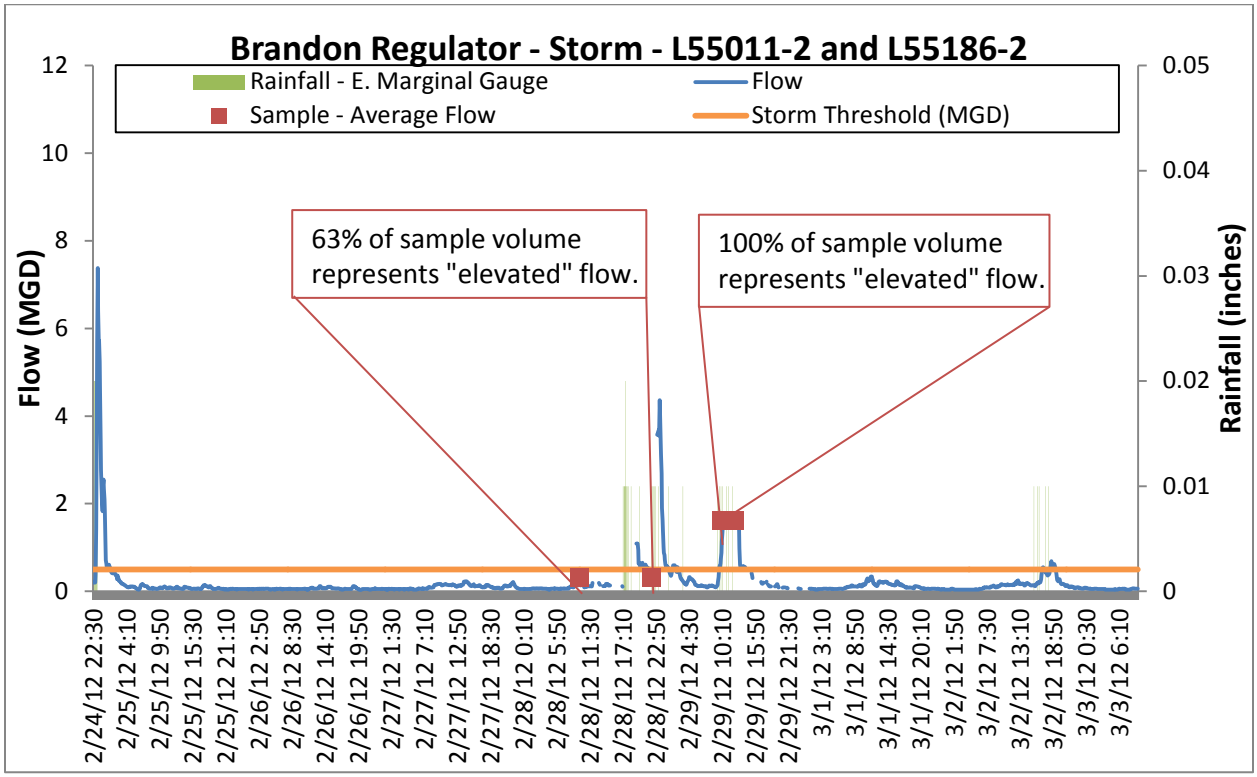


Figure B-46. Hydrograph at Brandon Regulator from 2/24/12 to 3/3/12, storm samples L55011-2 and L55186-2.

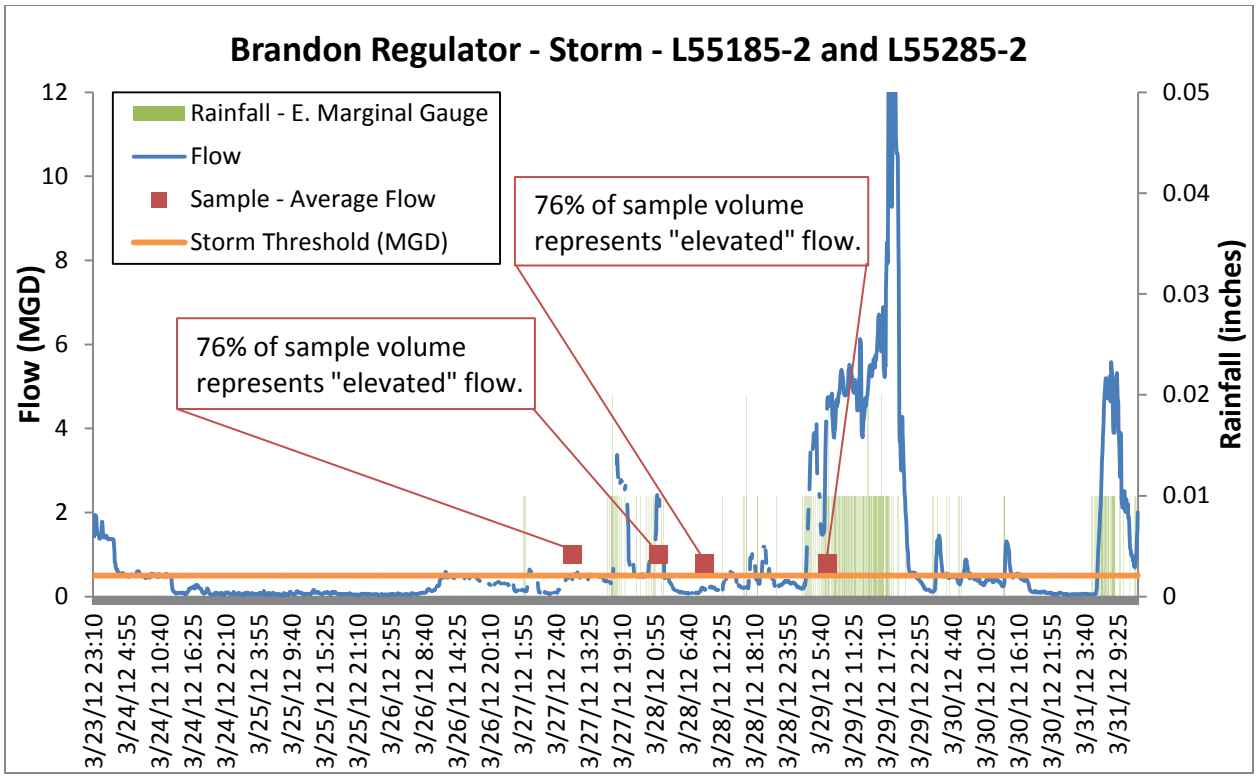


Figure B-47. Hydrograph at Brandon Regulator from 3/23/12 to 3/31/12, storm samples L55185-2 and L55285-2.

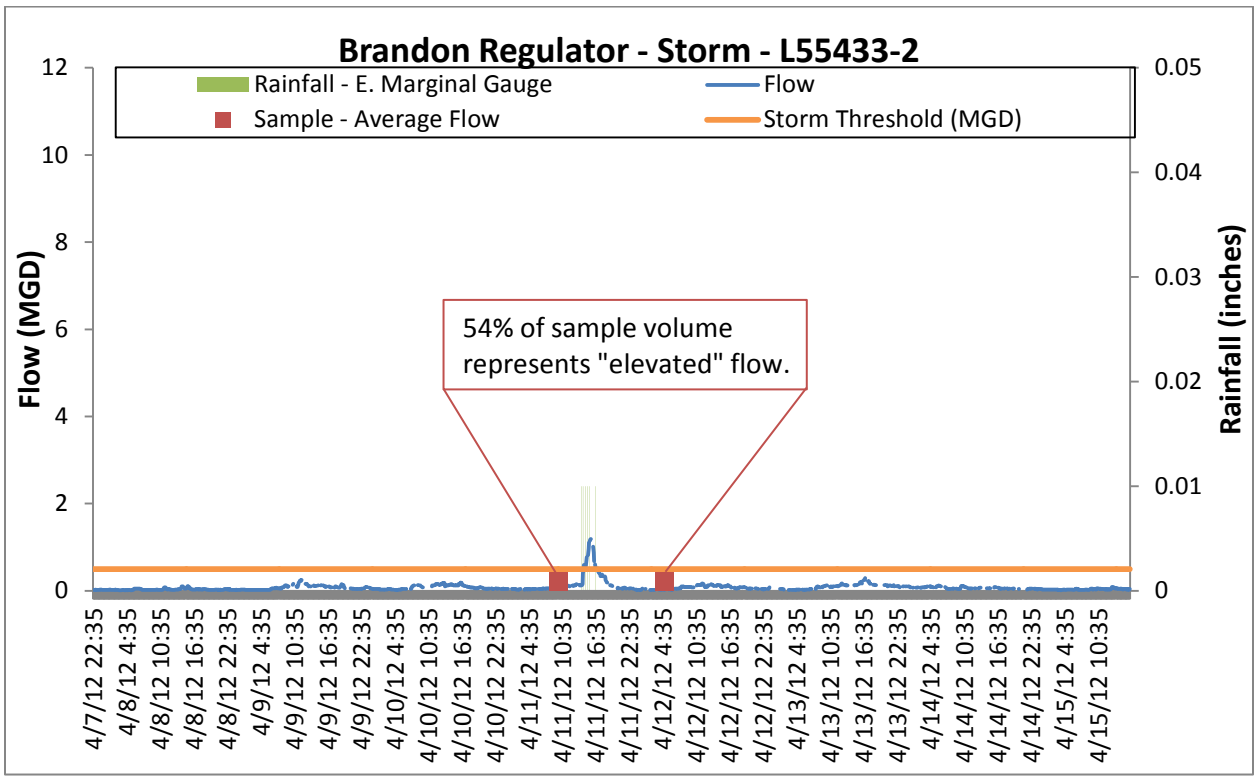


Figure B-48. Hydrograph at Brandon Regulator from 4/7/12 to 4/15/12, storm sample L55433-2.

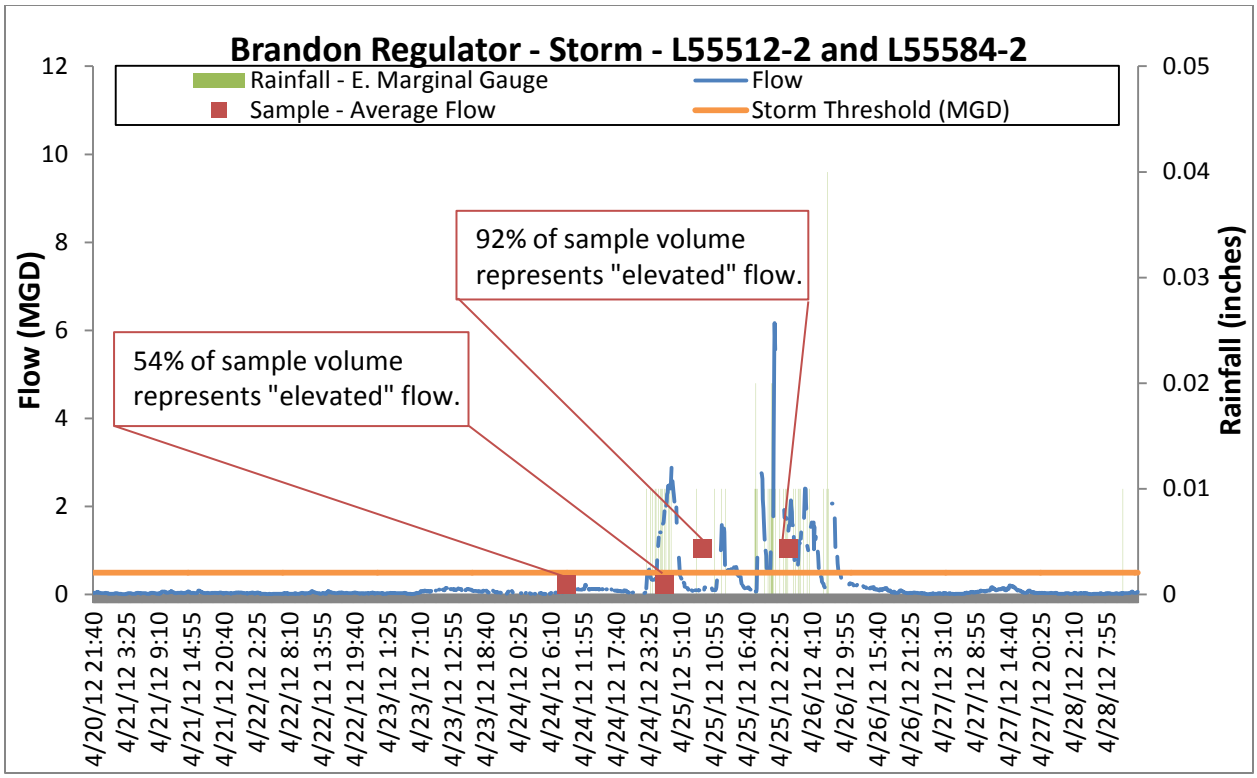


Figure B-49. Hydrograph at Brandon Regulator from 4/20/12 to 4/28/12, storm samples L55512-2 and L55584-2.

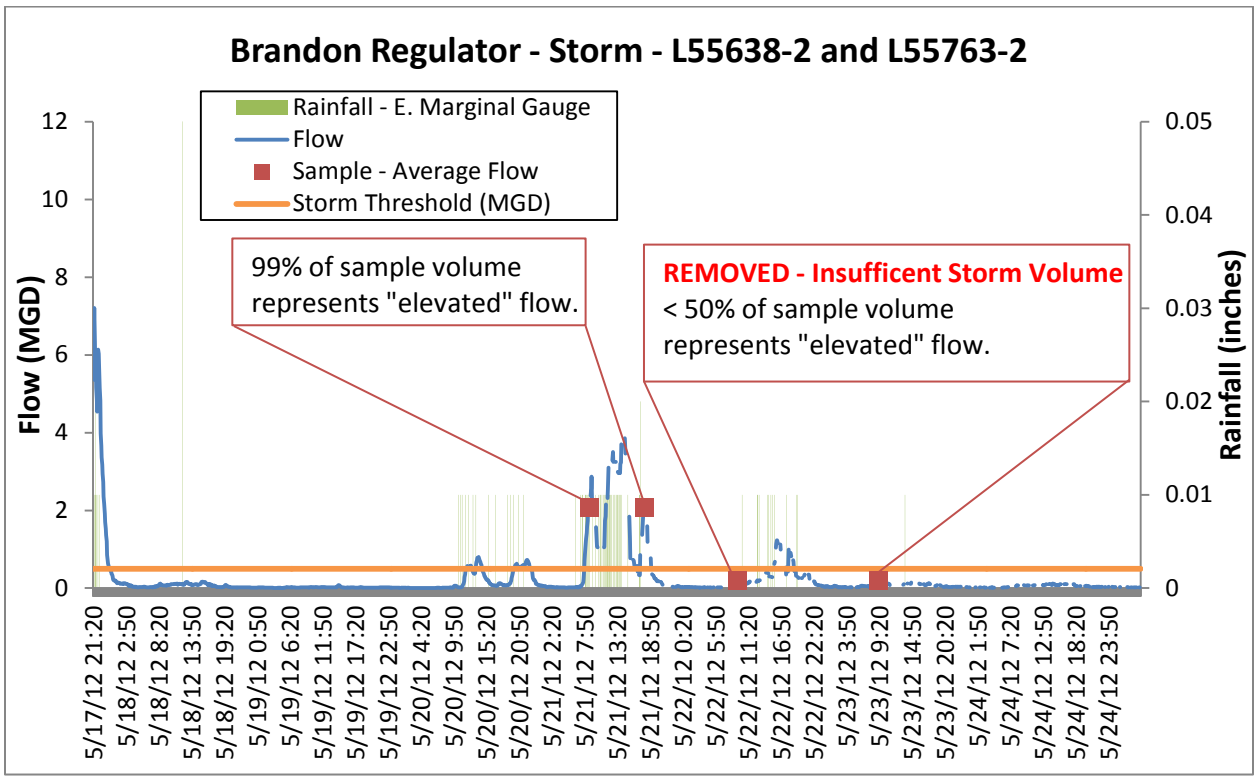


Figure B-50. Hydrograph at Brandon Regulator from 5/17/12 to 5/25/12, storm samples L55638-2 and L55763-2.

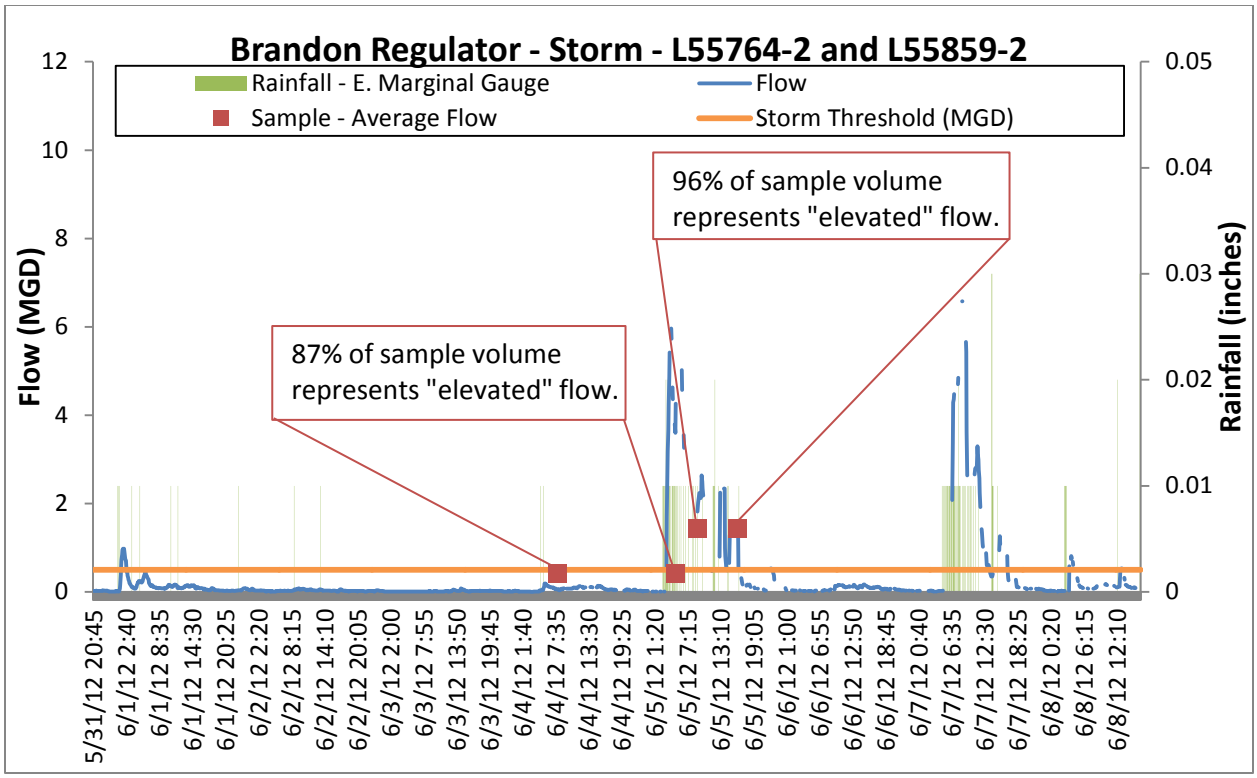


Figure B-51. Hydrograph at Brandon Regulator from 5/31/12 to 6/8/12, storm samples L55764-2 and L55859-2.

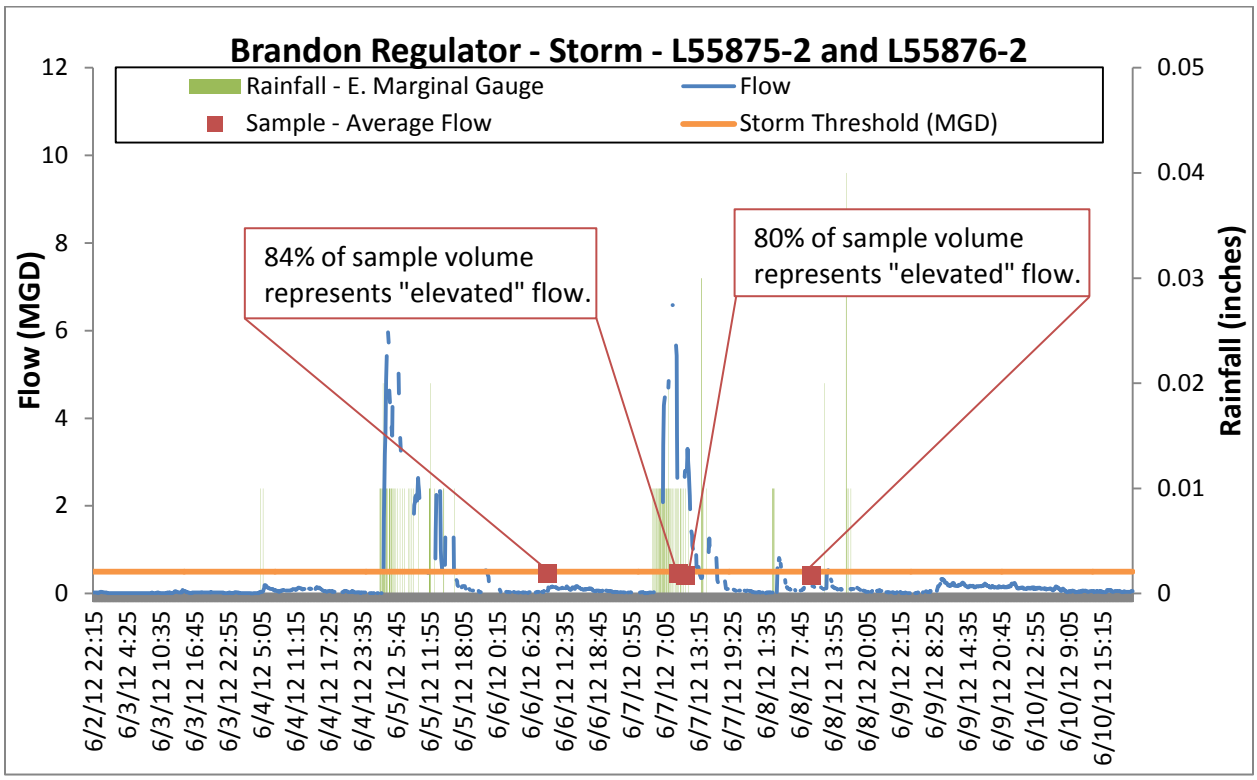


Figure B-52. Hydrograph at Brandon Regulator from 6/2/12 to 6/10/12, storm samples L55875-2 and L55876-2.

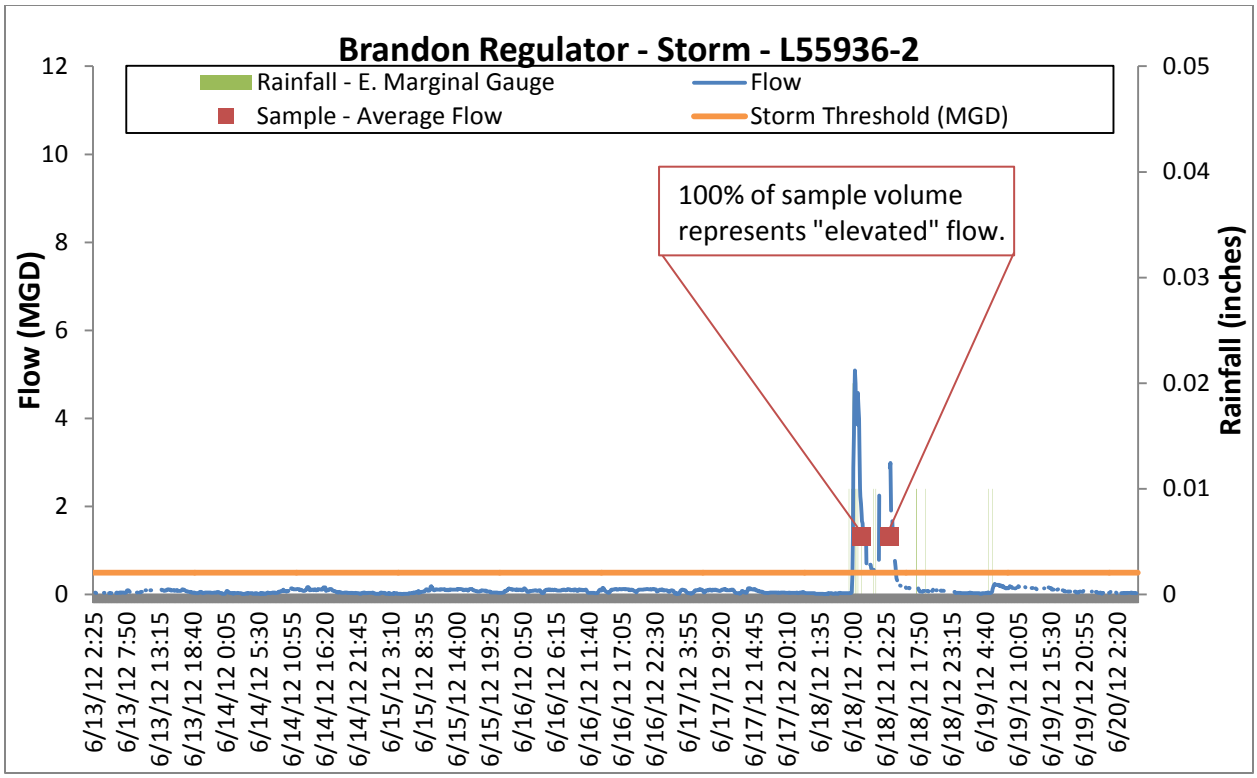


Figure B-53. Hydrograph at Brandon Regulator from 6/13/12 to 6/20/12, storm sample L55936-2.

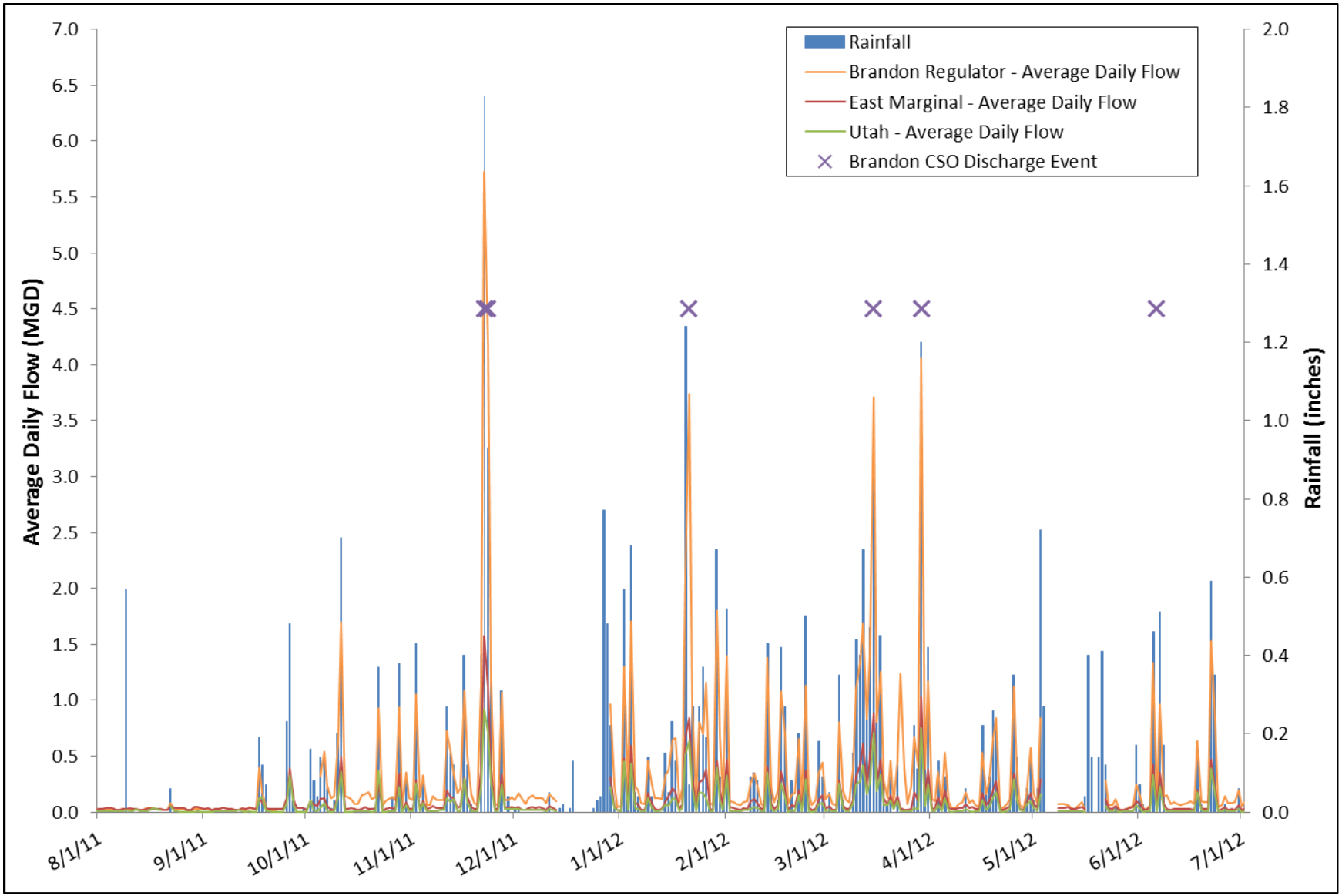


Figure B-54. Average Daily Flow for Brandon Regulator, Utah, and East Marginal Sampling Locations, Associated Rainfall, and Brandon CSO Discharge Events from August 2011 to July 2012.