



MEMORANDUM TO OD-R

**SUBJECT:** Monitoring Program for Regulatory Plan for Commercial Dredging Activities on the Kansas River

1. The purpose of this memorandum is to document changes in the Kansas River riverbed elevations, for the Monitoring Program as described in *Commercial Dredging Activities on the Kansas River, Appendix A: Regulatory Plan*. Baseline data was collected in 1992. The most recent data were collected in 2007. The plot of the Kansas River average riverbed profile is included with this memorandum.

2. According to “Dredging Restrictions, Section I. Restrictions Concerning Riverbed Degradation”, *Commercial Dredging Activities on the Kansas River, Appendix A: Regulatory Plan*, Page A-3, “If riverbed elevations in a 5-mile-long reach of river approach 2 feet of degradation, dredging activities which adversely affect bed elevations in that reach will be altered or terminated before unacceptable impacts occur. Further, if the average reduction of riverbed elevations in a 5-mile-long reach of river attains 2 feet (regardless of cause), dredging activities which adversely affect bed elevations in that reach will be terminated.”

Table 1 below shows five-mile-long reaches where the average reduction in riverbed elevation is approximately two feet or greater. Each average riverbed elevation drop is a weighted average based on the differences between the 1992 and 2007 average bed at each cross section and the distance between the cross sections.

**Table 1: Five-mile-long reaches where the average reduction in riverbed elevation is near 2 feet or more.**

Reach (River Miles)	Reach Length (Miles)	Avg. Drop (Feet)	2007 Authorized Dredger	Dredging Boundaries
21.6 - 26.7	5.1	2.0	River Miles 21.6 - 39.1 are not currently open to commercial dredging.	
24.2 - 30.2	6.0	2.3		
29.0 - 34.4	5.4	2.1		
32.9 - 39.1	6.2	2.1		
45.5 - 50.6	5.1	1.7	The Master's Dredging Co., Inc.	47.1 - 48.0
			Penny's Concrete	45.2 - 46.7
				49.6 - 51.35
83.0 - 89.0	6.0	2.0	River Miles 84.5 - 91.6 are not currently open to commercial dredging.	
86.6 - 92	5.4	2.1		

3. River miles 77 to 85.2 were analyzed previously in 2005 for the purpose of adding a new permitted dredge site from river mile 77.1 to 78.6. The new site was added and dredging began. The riverbed elevation drop for the reach was calculated by averaging the differences between 1992 and 2005 average riverbed elevations for the reach cross sections. Table 2 shows the results of this analysis.

**Table 2: Average reduction in riverbed elevation surrounding new dredge site from river miles 77.1 to 78.6**

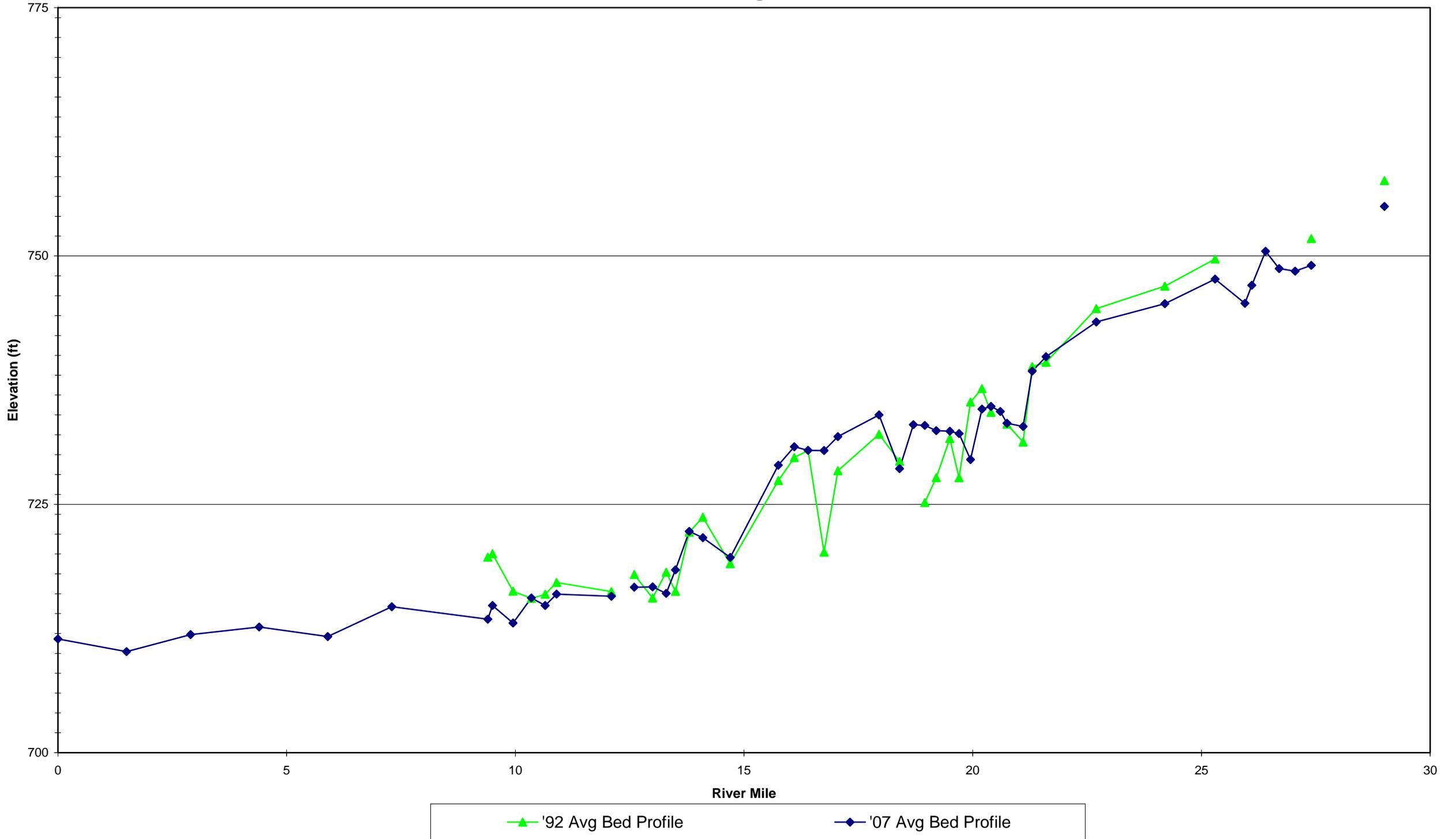
<b>Reach (River Miles)</b>	<b>Reach Length (Miles)</b>	<b>1992-2005 Avg. Reduction (ft)</b>	<b>2005-2007 Avg. Reduction (ft)</b>	<b>1992-2007 Total Avg. Reduction (ft)</b>
77 - 83	6.0	0.1	0.5	0.6
80 - 85.2	5.2	0.3	0.8	1.0

As shown in Table 2 above, some degradation had already occurred by 2005 in the river surrounding the new reach before dredging commenced. The reach, however, has not yet attained a critical amount of loss from the dredging. Nevertheless, given the marked increase in the rate of degradation over the past two years in comparison to the degradation of the previous thirteen years, it is unlikely that dredging within this reach will be sustainable for an extended period of time.

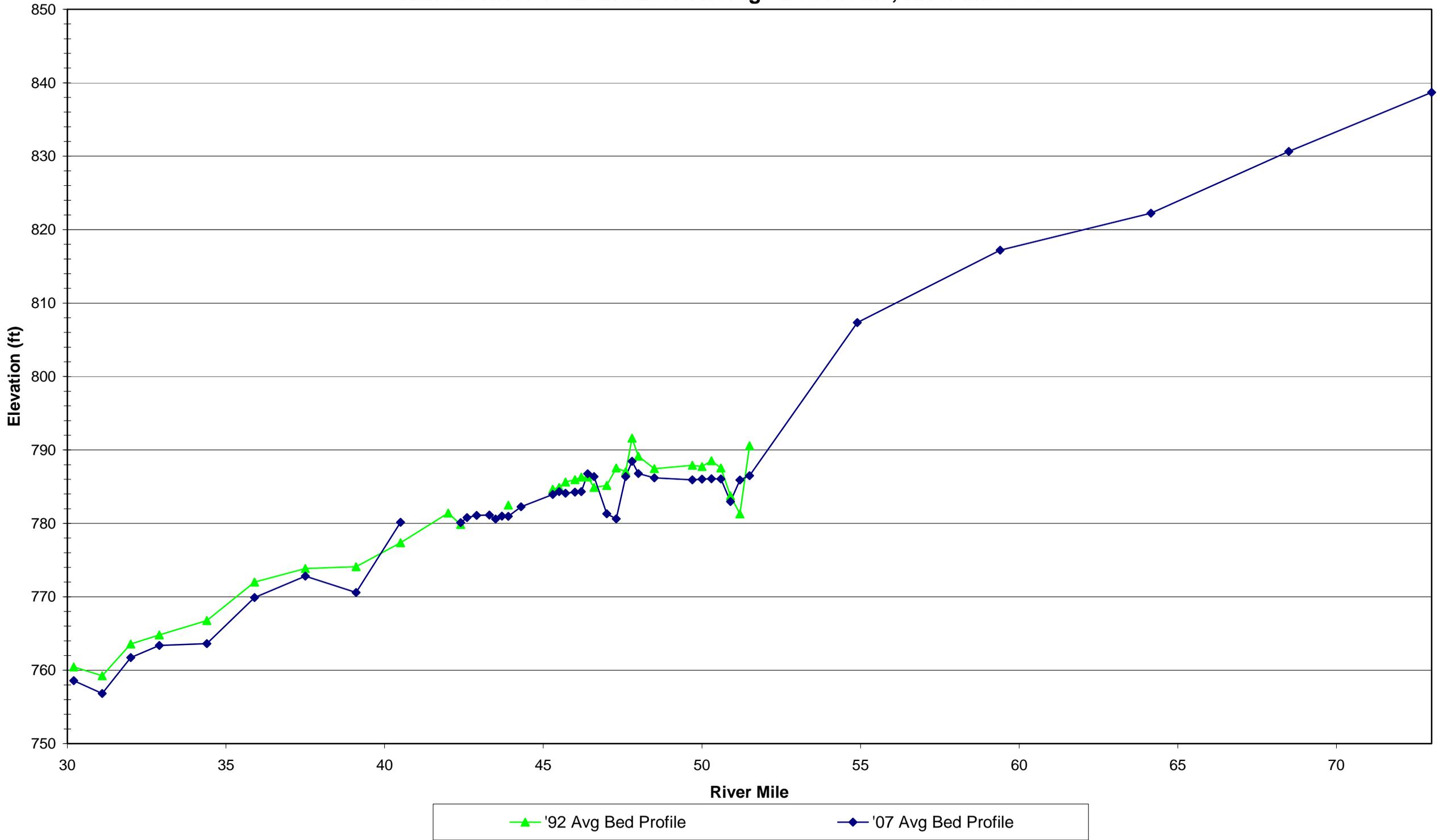
Jim Pennaz, P.E.  
Chief, Hydrologic Engineering Branch

Attachments

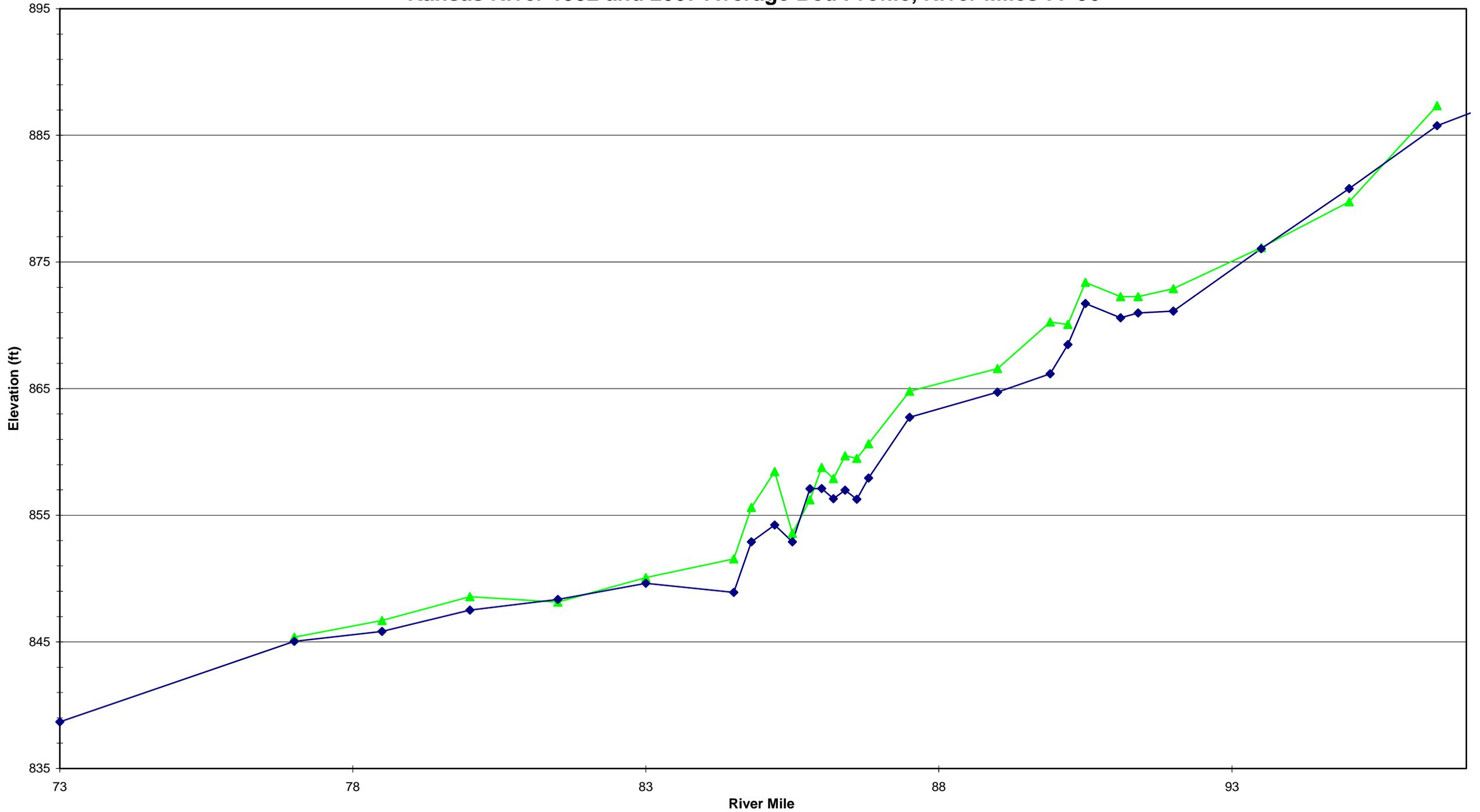
Kansas River 1992 and 2007 Average Bed Profile, River Miles 0-30



Kansas River 1992 and 2007 Average Bed Profile, River Miles 30-51

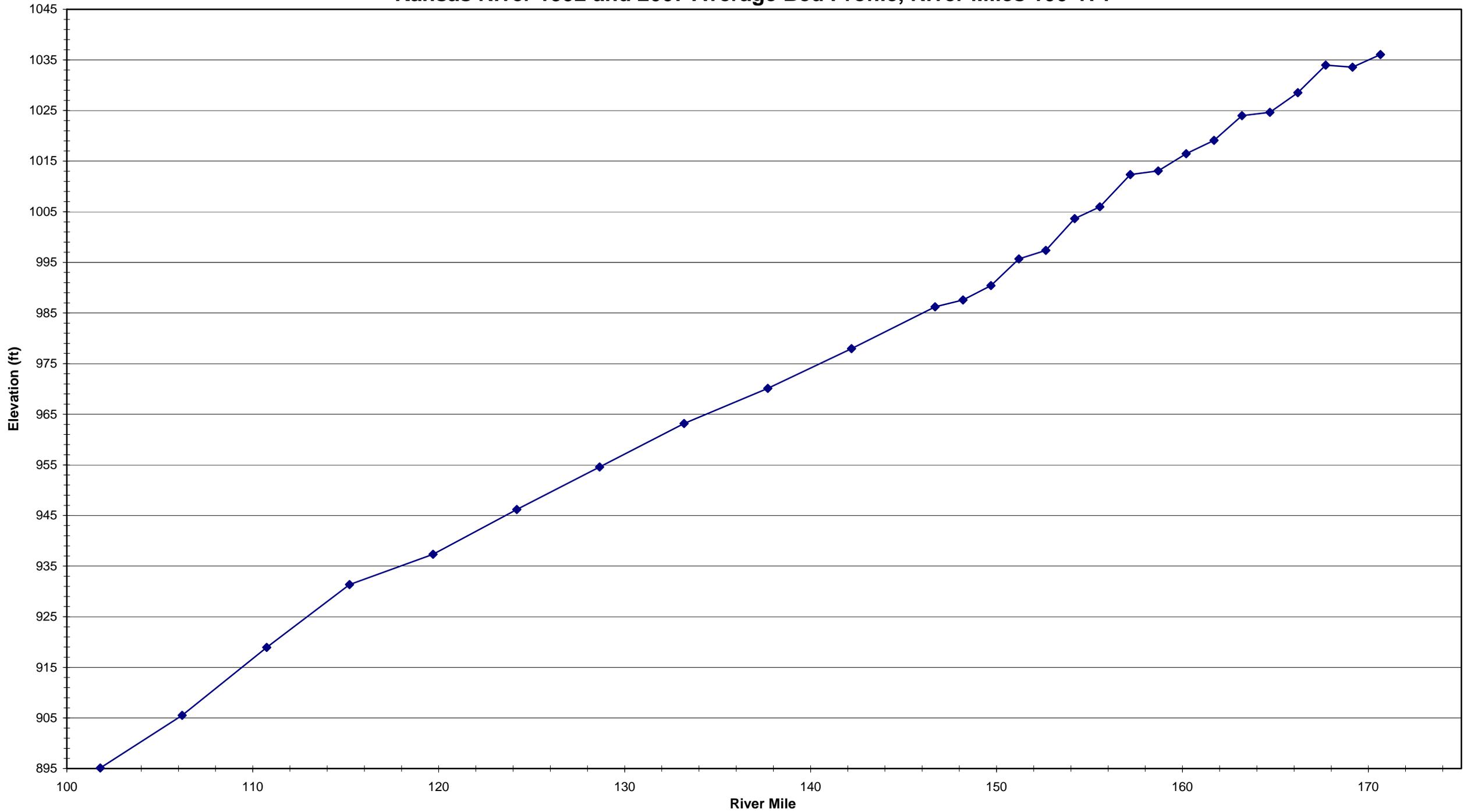


Kansas River 1992 and 2007 Average Bed Profile, River Miles 77-96



▲ '92 Avg Bed Profile      ◆ '07 Avg Bed Profile

Kansas River 1992 and 2007 Average Bed Profile, River Miles 100-171



—◆ '07 Avg Bed Profile