CENWK-ED-HR

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 were collected in 1992. The most recent data were collected in 2009. 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."

For purposes of this analysis, using all 111 cross sections from the 2009 data, approximate five-mile reaches of the river were examined for an average reduction in riverbed elevation near or greater than 2 feet. The reduction for each reach was calculated by first subtracting the 2009 average riverbed elevation from the 1992 average riverbed elevation at each cross section, and then applying a weighted average to values based on the distances between cross sections.

For 2009, no five-mile reach experienced a 2' or greater reduction in average bed elevation, and no currently authorized dredging reach approached 2' of degradation. Table 1 shows the elevation changes since 1992 in five-mile reaches that are not currently open to commercial dredging. Discontinued dredging reaches between river miles 21.3 and 39.1 did approach 2' of degradation.

Reach (River Miles)	Reach Length (Miles)	Avg Change (ft)	Dredging Boundaries	2009 Authorized Dredger
21.3 - 26.4	5.1	-1.8	These reaches are not currently open to commercial dredging.	
24.2 - 29.0	4.8	-1.7		
25.3 - 30.2	4.9	-1.9		
27.4 - 32.9	5.5	-1.8		
32.9 - 37.5	4.6	-1.7		
34.4 - 39.1	4.7	-1.8		
84.5 - 89.9	5.4	-1.2		
86 - 91.1	5.1	-1.4		
87.5 - 92	4.5	-1.4		

Table 1: Elevation changes since 1992 in five-mile reaches that are not currently open to commercial dredging. Negative values represent degradation.

Table 2 lists the average change in bed elevation for five-mile reaches at currently authorized dredging reaches. All permitted reaches are shown in this table.

Reach (River Miles)	Reach Length (Miles)	Avg Change (ft)	Dredging Boundaries	2009 Authorized Dredger
9.4 - 14.7	4.7	-0.46	9.4 - 10.4	Kaw Valley
12.1 - 17.05	4.95	1.75	12.8 -13.9	
14.1 - 19.2	5.1	2.81	15.4 - 16.9	
17.95 - 22.7	4.75	1.32	18.65 - 20.15	HSG Acquisition, formerly Holliday Sand & Gravel Co.
			21.0 - 21.15	
42 - 47	5	-0.81	42.6 - 44.1	Master's Dredging
			45.2 - 46.7	Penny's Concrete
47 - 51.5	4.5	-1.18	47.1 - 48.0	Master's Dredging
			49.6 - 51.35	Penny's Concrete
76.6 - 81.5	4.9	-0.68	77.1 - 78.6	Victory Sand Mining & Dredging,

Table 2: Average change in bed elevation at permitted dredging reaches. Negative values represent degradation.

3. The results of this analysis indicate that no portions of the Kansas River exceeded the limit of 2 feet of degradation across a five mile reach between 2009 and 1992. Additionally, all reaches that approached 2 feet of degradation were located between river miles 21.3 and 39.1 where no permitted dredging reaches are located.

4. Point of contact for this memorandum is John Shelley, Civil Engineer, ED-HR, 816-389-2310.

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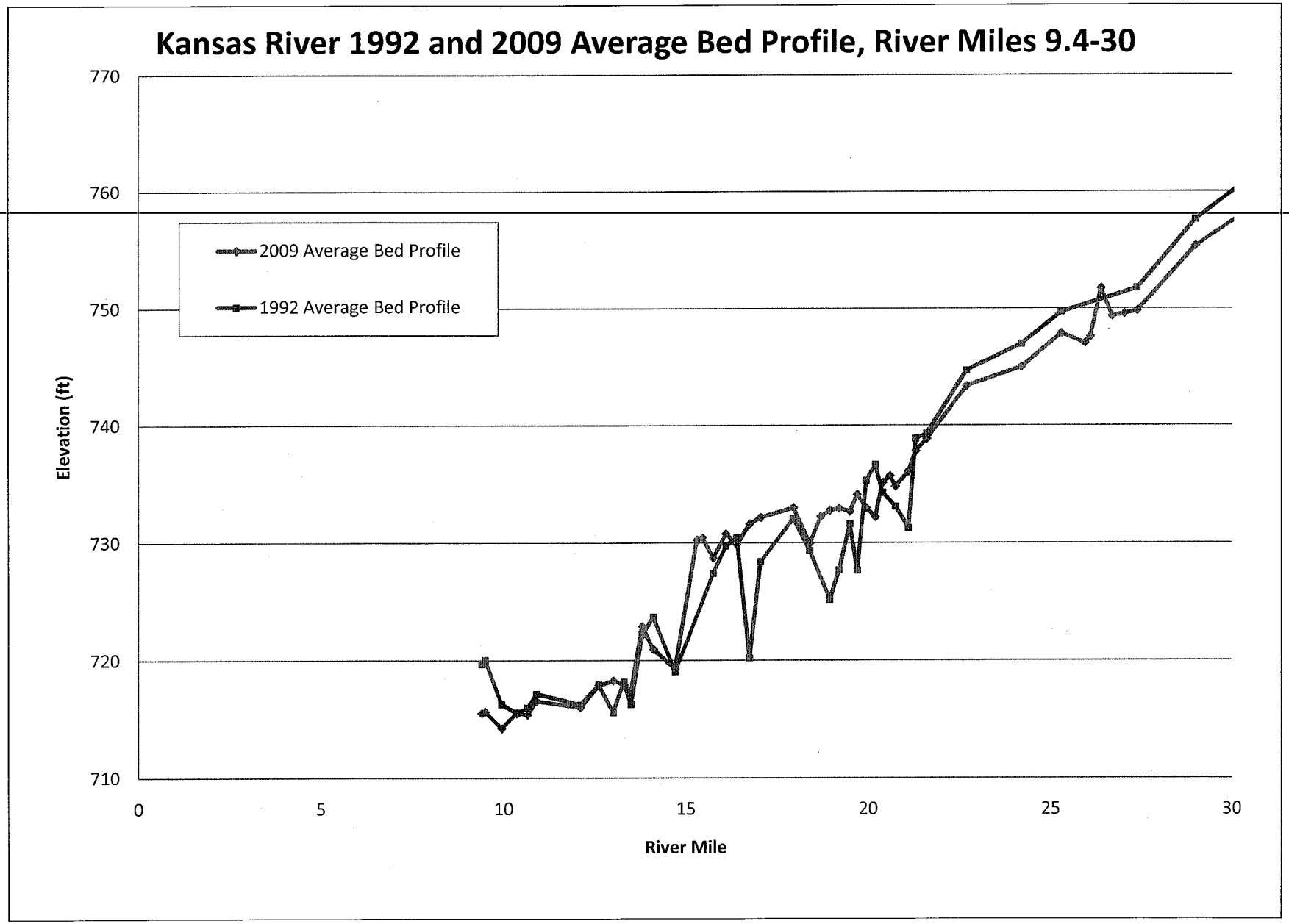
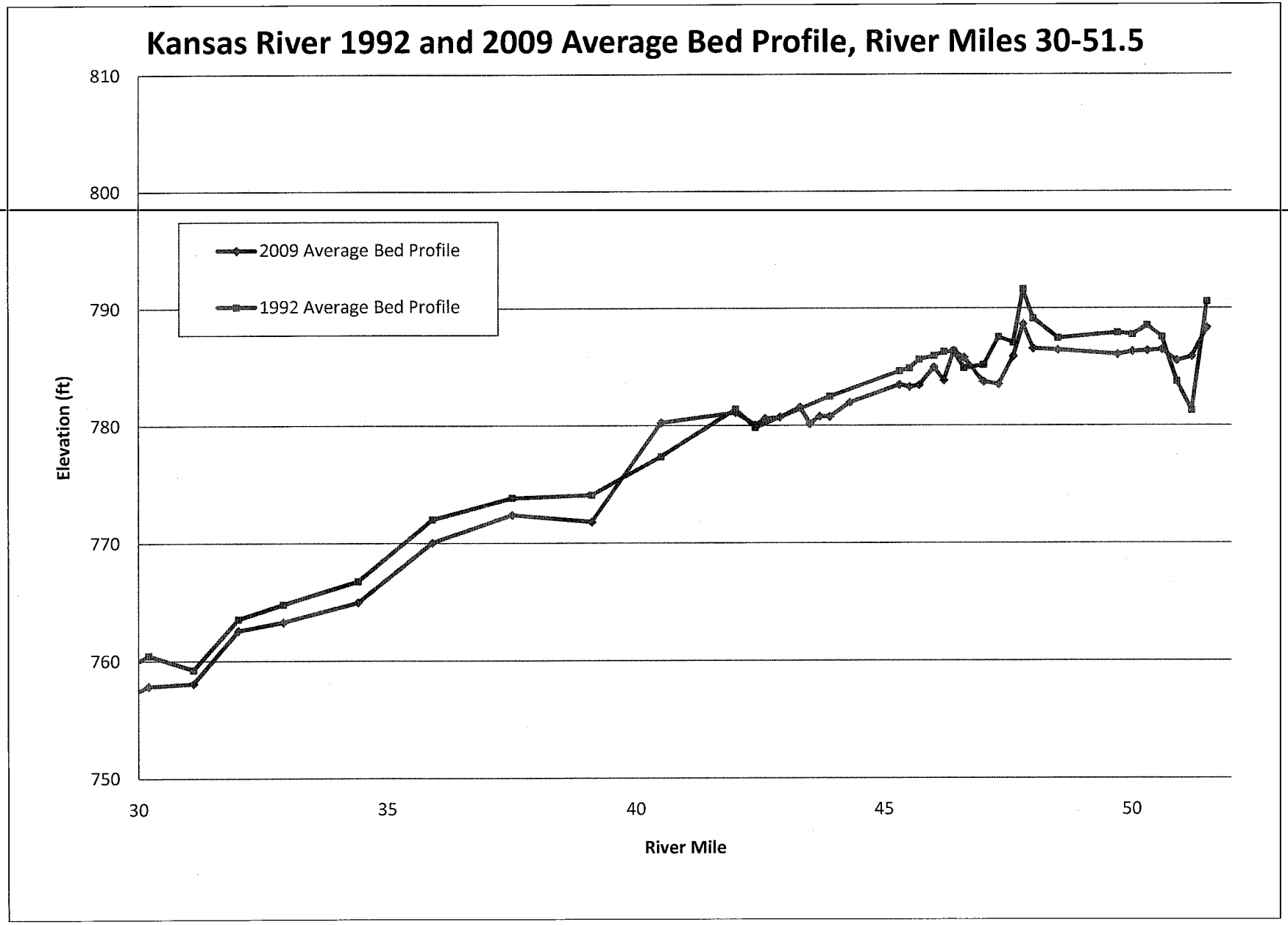
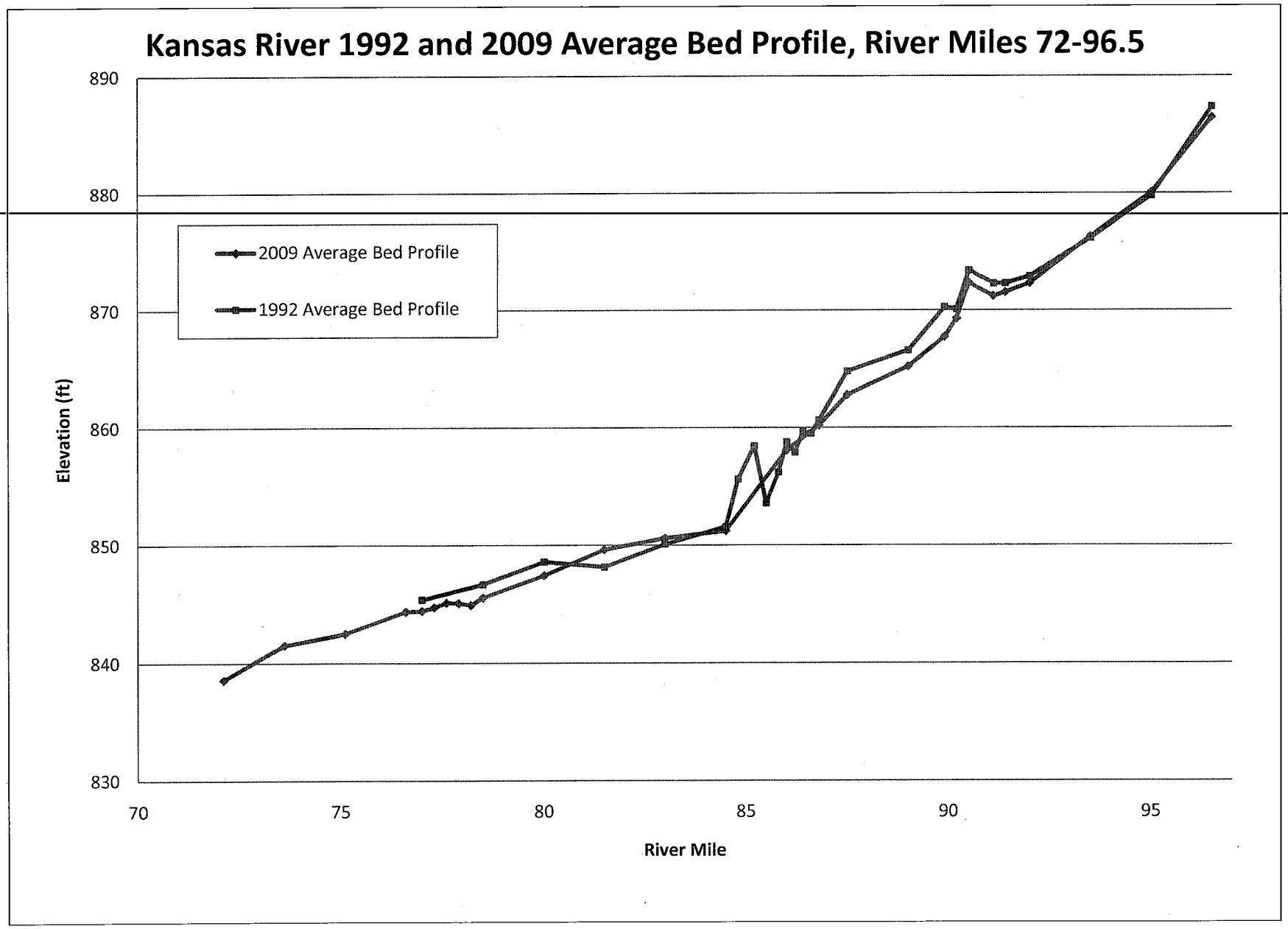
3 Enclosures
1. KR 1992-2009, River Miles 9.4.30
2. KR 1992-2009, River 30.51.5
3. KR 1992-2009, River Miles 72.96.5


Kansas River 1992 and 2009 Average Bed Profile, River Miles 9.4-30
2009 Average Bed Profile
1992 Average Bed Profile
Elevation (ft)
770
760
750
740
730
720
710
0
5
10
15
20
25
30
River Mile


Kansas River 1992 and 2009 Average Bed Profile, River Miles 30-51.5
2009 Average Bed Profile
1992 Average Bed Profile
Elevation (ft)
810
800
790
780
770
760
750
30
35
40
45
50
River Mile


Kansas River 1992 and 2009 Average Bed Profile, River Miles 72-96.5
2009 Average Bed Profile
1992 Average Bed Profile
Elevation (ft)
890
880
870
860
850
840
830
70
75
80
85
90
95
River Mile