SJRRP Flow Bench Evaluation

March 1, 2010

Flows below Friant Dam will increase to 500 cfs on March 1, 2010 based on the Restoration Administrator 2010 Interim Flow Recommendations for the San Joaquin River Restoration Program, February 1 through December 1, 2010. The evaluation of the increase is shown below.

As of February 28, 2010, Reclamation personnel have reported the following:

1. Flows are below known conveyance thresholds (8,000 cfs in Reach 2A, 1,300 cfs in Reach 2B, and 1,300 cfs in Reach 3) based on preliminary real-time data.
2. Mendota Pool operations calls did not identify groundwater seepage or flow problems.
3. The seepage hotline received no calls that reported the potential for probable or imminent seepage problems.
4. Real-time groundwater in Reach 2B and 3 has not risen above identified groundwater level thresholds based on preliminary data.
5. Monitored groundwater wells have not risen above identified groundwater level thresholds with the exception of well R2B-1 which shows a depth below ground surface of 5.85 ft. The buffer zone for this well is 4-6 feet.
6. Measured losses in Reach 2A are around 200 cfs, but have not yet stabilized.
7. Projected groundwater levels from the upcoming increase in flow are below monitoring thresholds except for well R2B-1, which shows a predicted depth below ground surface of 5.4 ft (buffer 4-6 feet).
8. No problems have been reported from the LSJLD and they were notified of potential increase or continuance in flows and identified no potential issues.
9. No problems have been reported from CCID or SLCC and they were notified of potential increase or continuance in flows and identified no potential issues.

Reclamation and Columbia Canal Company representatives visited well R2B-1 on February 24. Reclamation and RMC representatives discussed options on the 25th. The evaluation determined that the existing buffer should remain, but the planned flow increase could proceed with close monitoring.

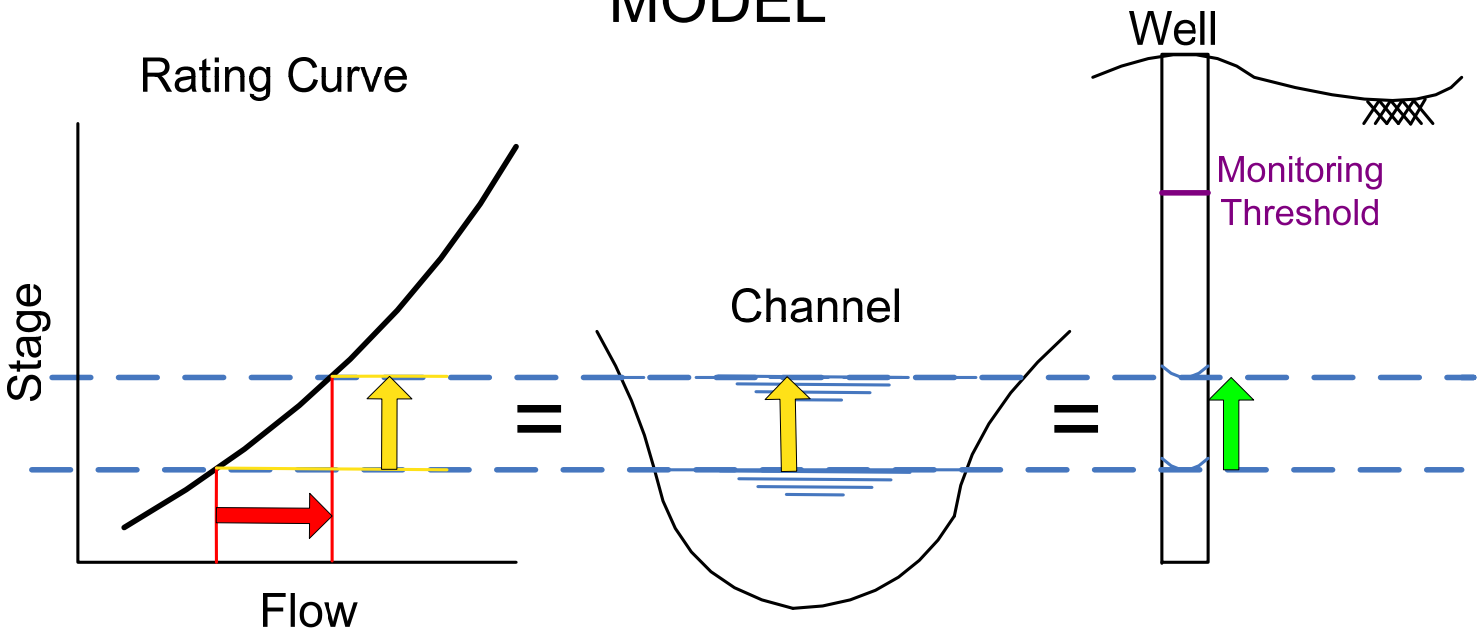
DATA:
Depth versus discharge rating curves along with Exhibit B assumptions and an estimated 300 cfs delivery to Arroyo Canal predicted new groundwater levels. Assumed changes in flows are:

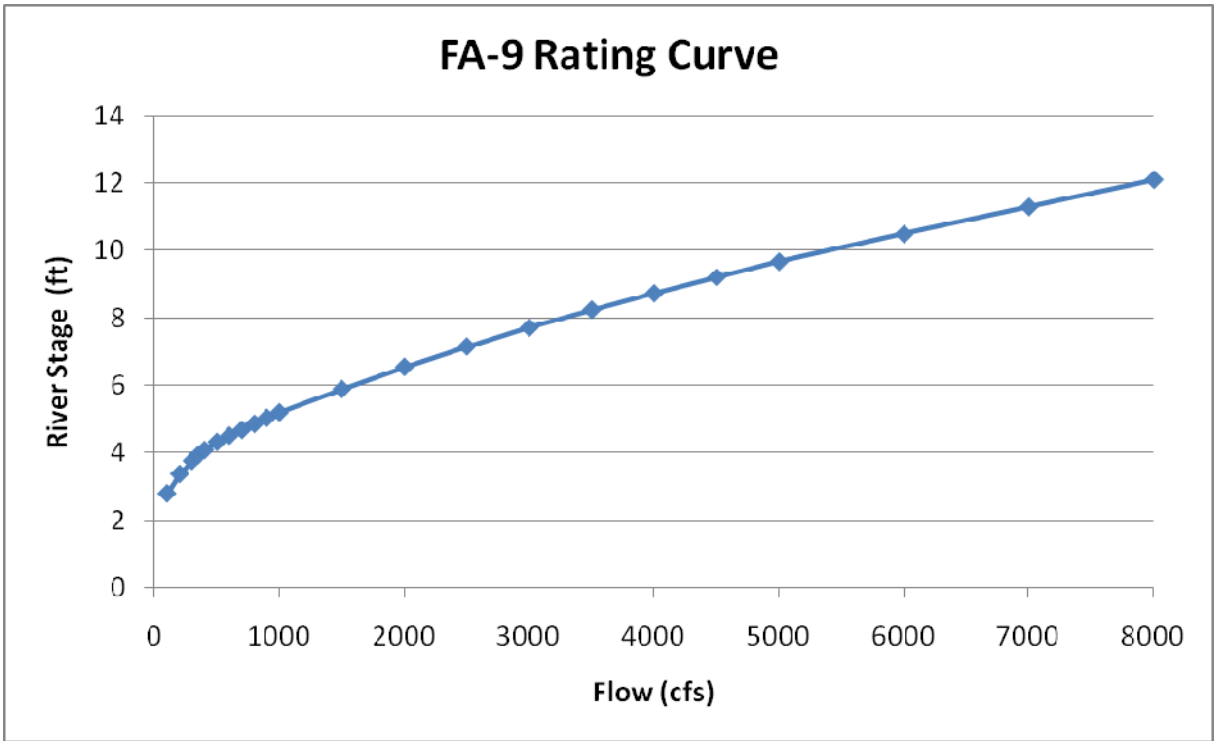
	Current Target (cfs)	Future Target (cfs)	Change (cfs)
Reach 2A	255	375	120
Reach 2B	175	285	110
Reach 3	300	585	285
Reach 4A	0	285	285

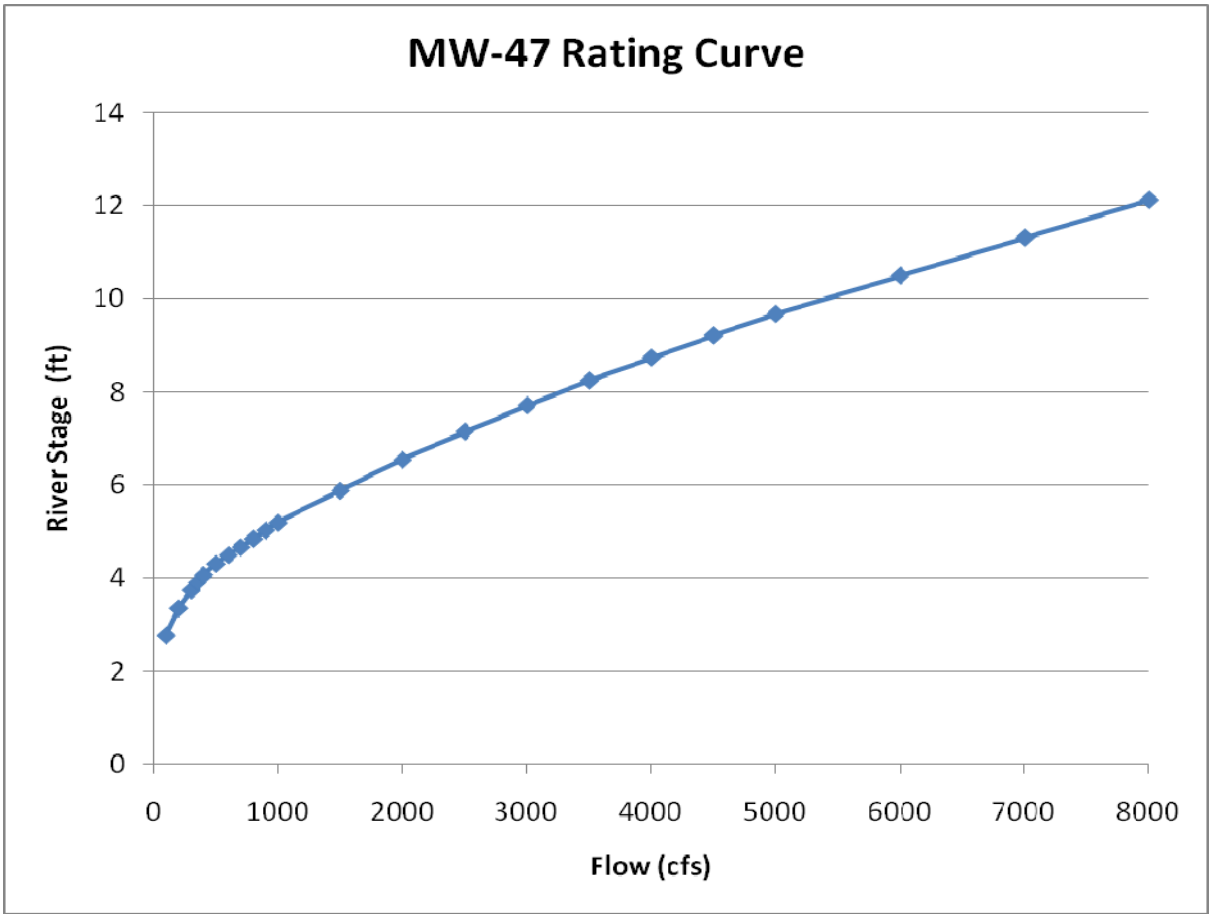
Manual measurements via electronic well sounder are taken weekly and provided along with recent flow data in the Weekly Groundwater Report, available at: http://restoresjr.net/activities/if/index.html. Table 1-1 shows the anticipated rise in groundwater. Subsequent pages contain the rating curves for each of these key wells from the TetraTech hydraulic model.

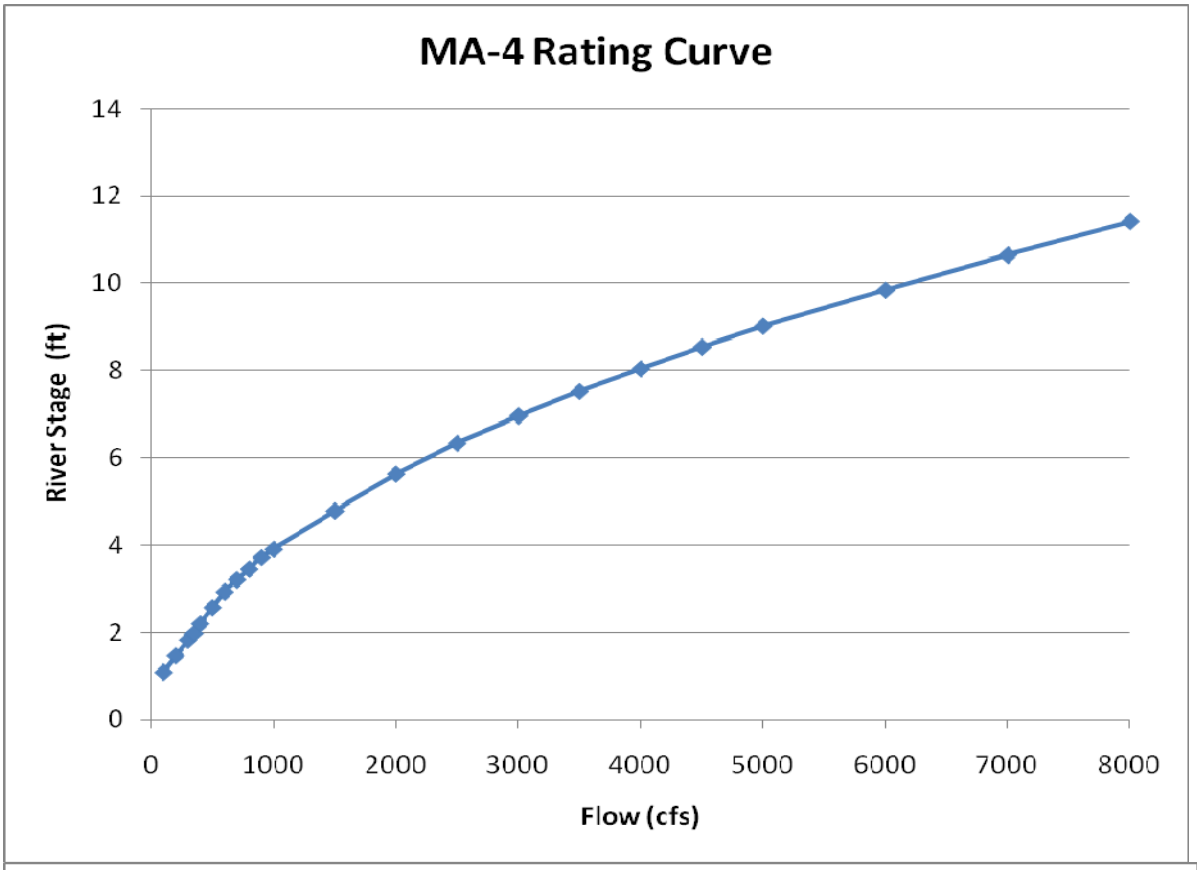
Table 1-1: Predicted Increases in Groundwater Level in Key Wells						
Well_ID	**Site**	**Monitoring Threshold (ft bgs)**	**Screen Depth (ft bgs)**	**Current GW Depth (ft bgs) as of week of 2/22/2010**	**Predicted Increase in Stage (ft)**	**Anticipated New GW Depth (ft)**
FA-9	Reach 2A – Transect 12 – Left	6	12-32	13.62	0.42	13.2
MW-47	Reach 2A – Transect 12 – Right	8	20-40	11.29	0.42	10.9
MA-4	Reach 2A – Transect 13 – Right	8	15-25	17.5	0.43	17.1
MW-49B	Reach 2A – Transect 13 – Left	6	10-20	8.03	0.43	7.6
MW-54B	Reach 2B – San Mateo Ave. – Right	TBD	TBD	21.74	0.7	21.0
MW-55B	Reach 2B – San Mateo Ave. – Left	8	10-15	12.63	0.7	11.9
R2B-1	Reach 2B – Right	6	8-11	5.85	0.46	5.4
R2B-2	Reach 2B – Right	6	17-20	12.98	0.46	12.5
R3-1	Reach 3 – Right	6	9-24	9.88	1.1	8.8
R3-6	Reach 3 – Right	6	17-20	10.05	1.2	8.9
R3-7	Reach 3 – Right	5	17-20	8.88	1.3	7.6
MW-84	Reach 4A – Highway 152 – Right	6	32-52	45.3	1.8	43.5
MW-87B	Reach 4A – Highway 152 - Left	6	TBD	>14 (dry)	1.8	13.2 to dry

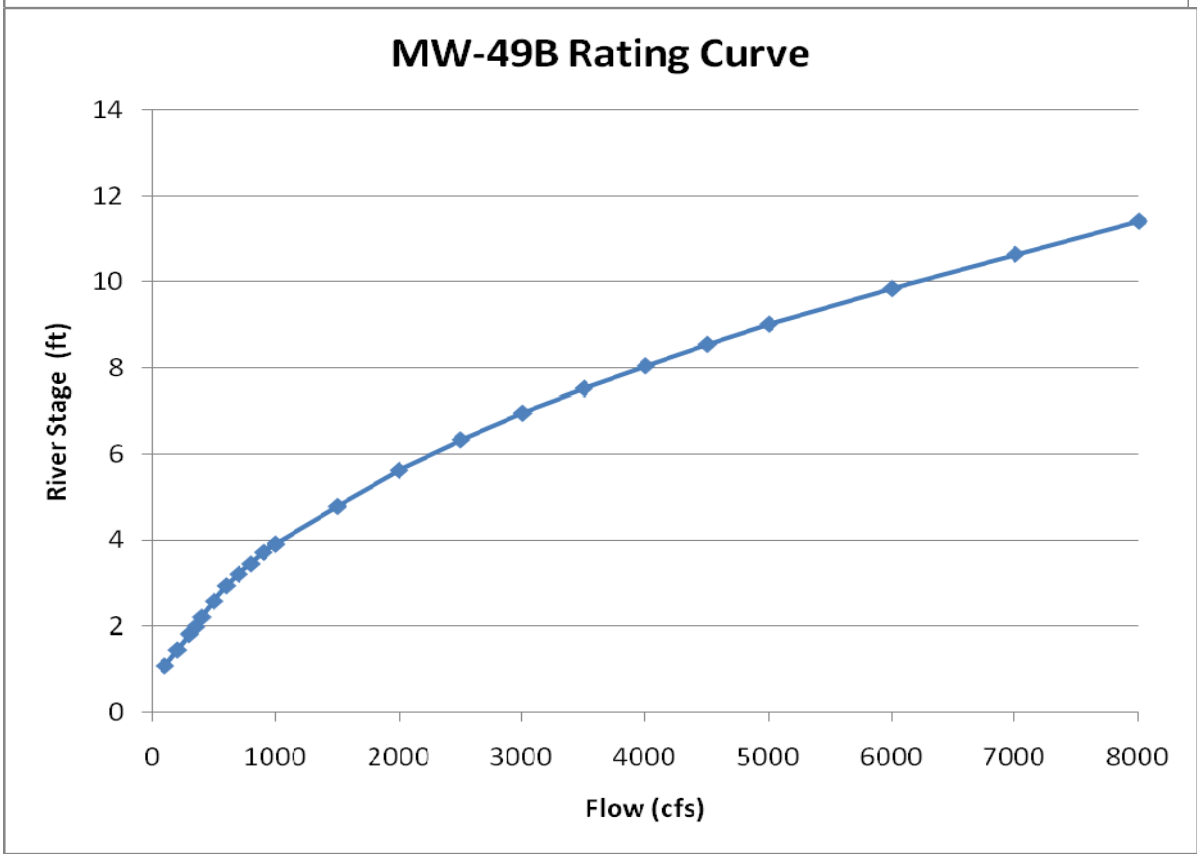
SEEPAGE EVALUATION CONCEPTUAL MODEL

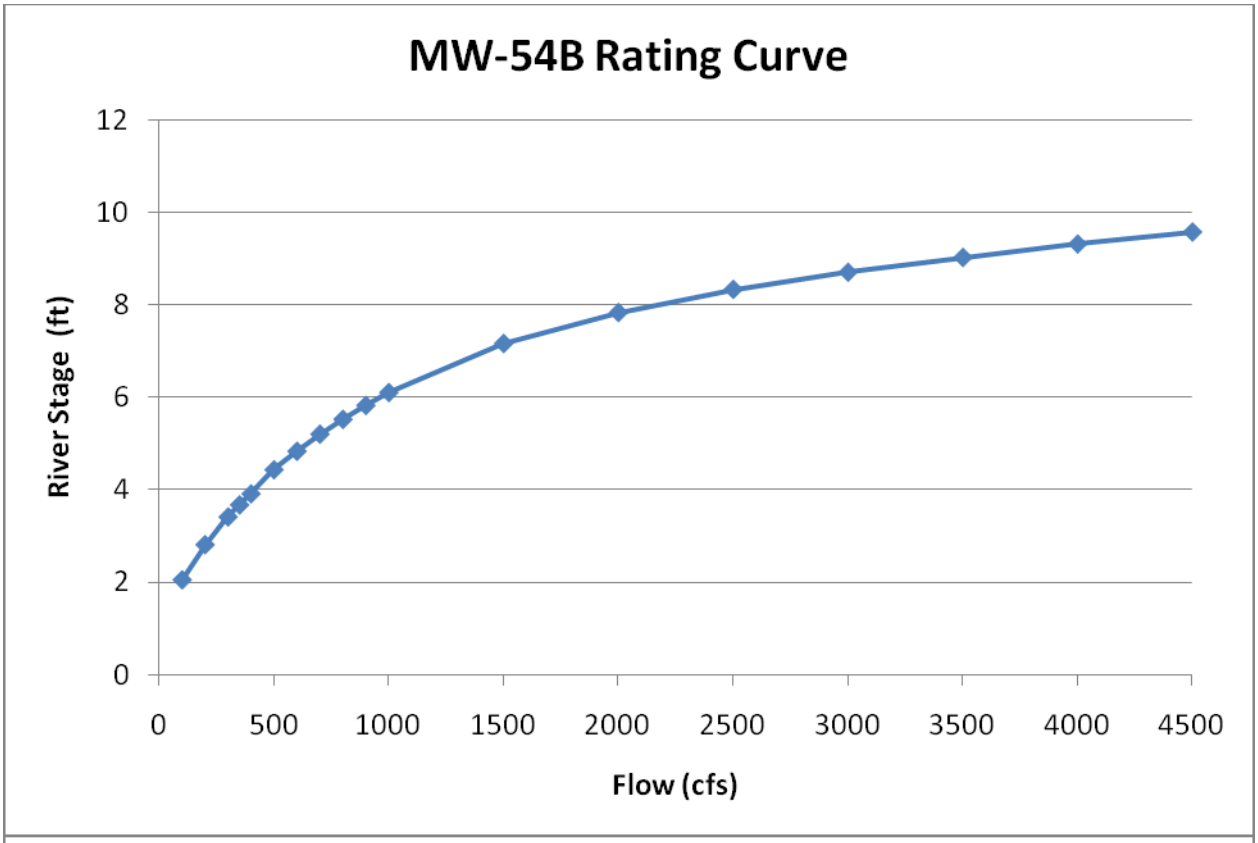


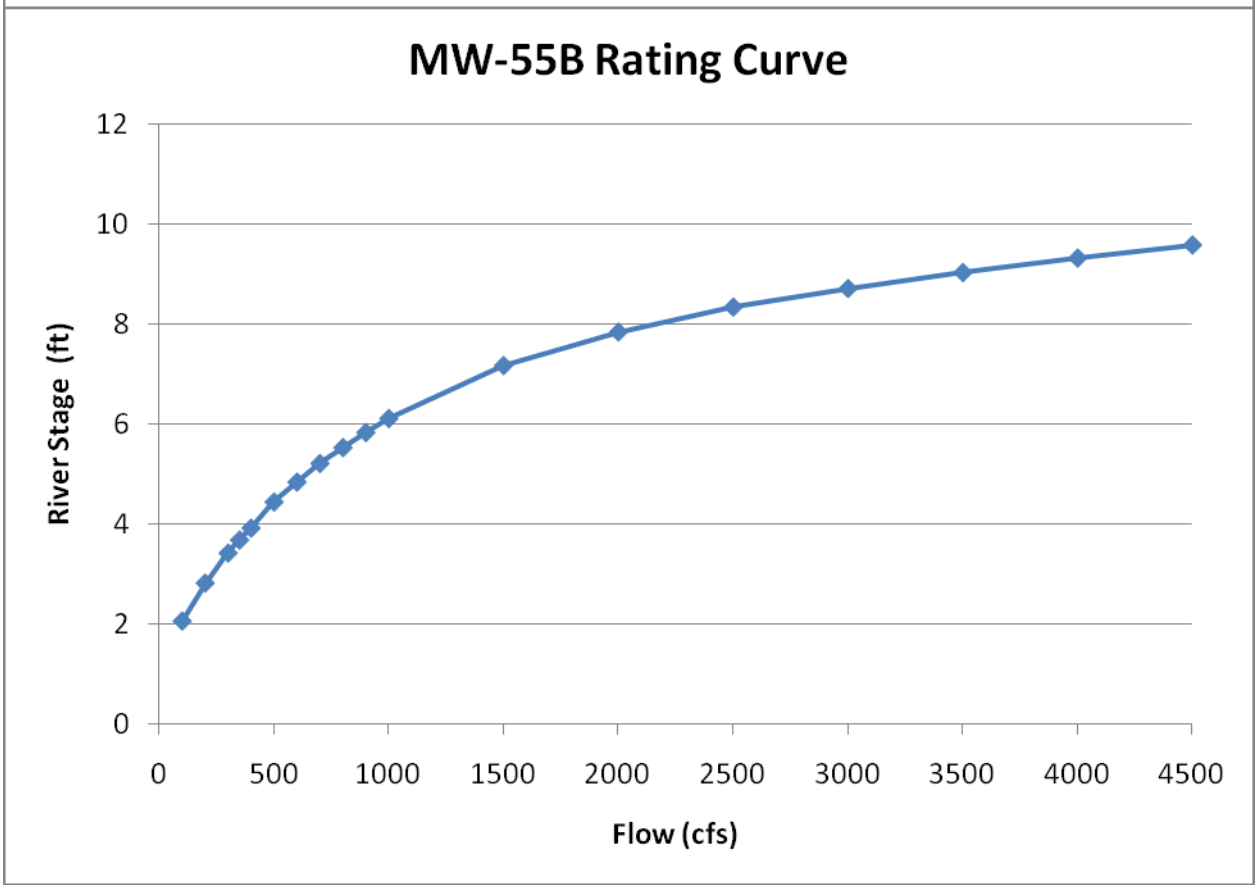

FA-9 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
Flow (cfs)

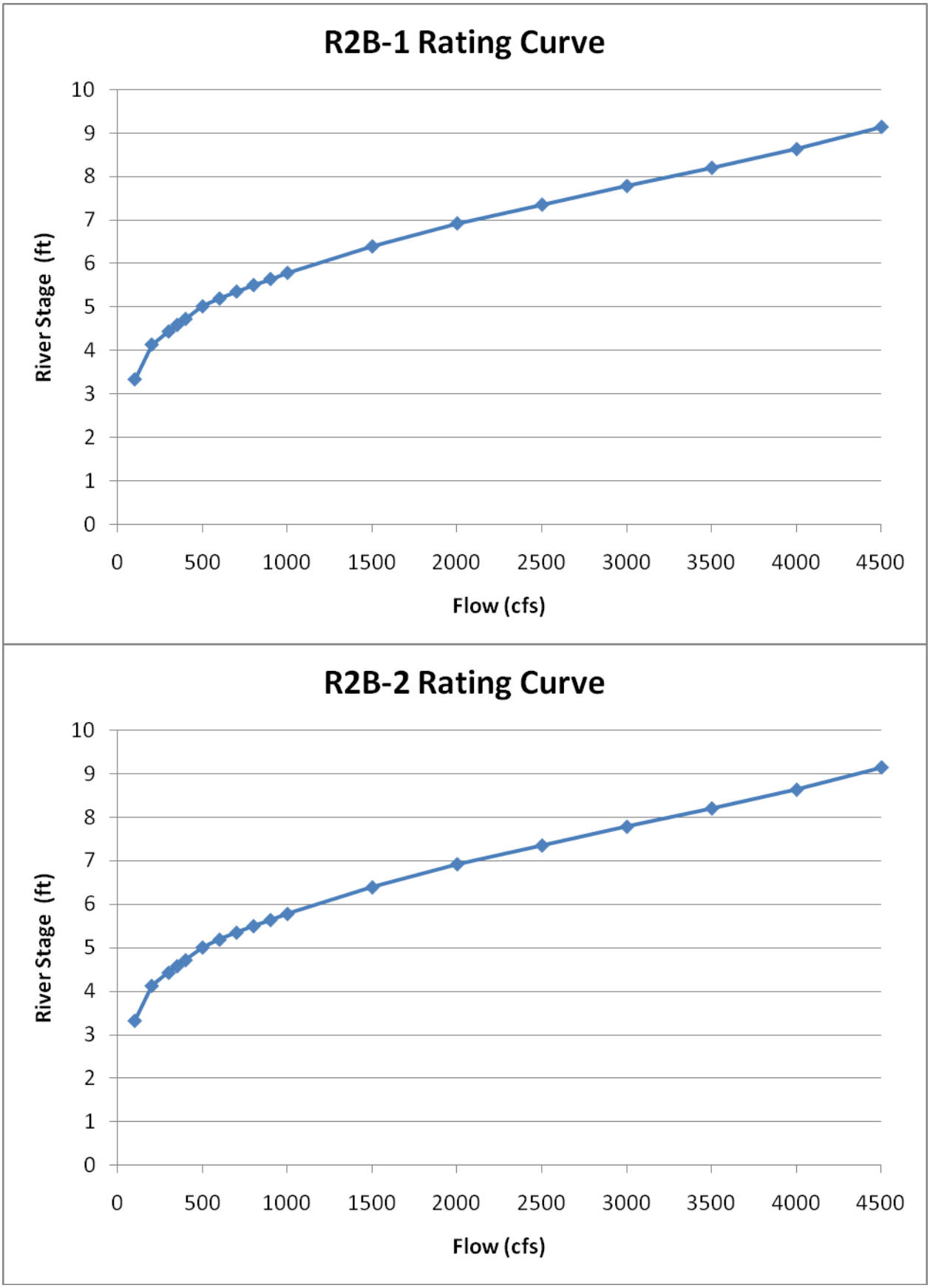

MW-47 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
Flow (cfs)

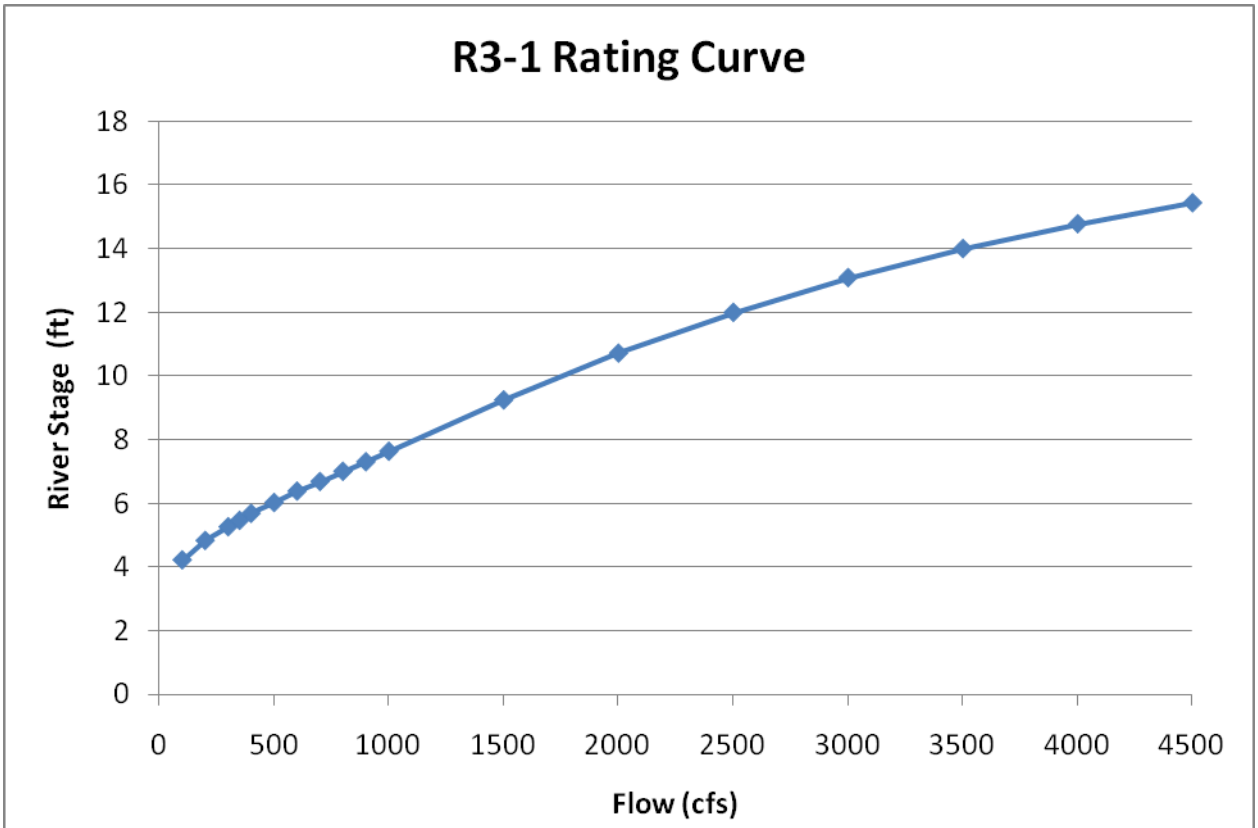

MA-4 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
Flow (cfs)

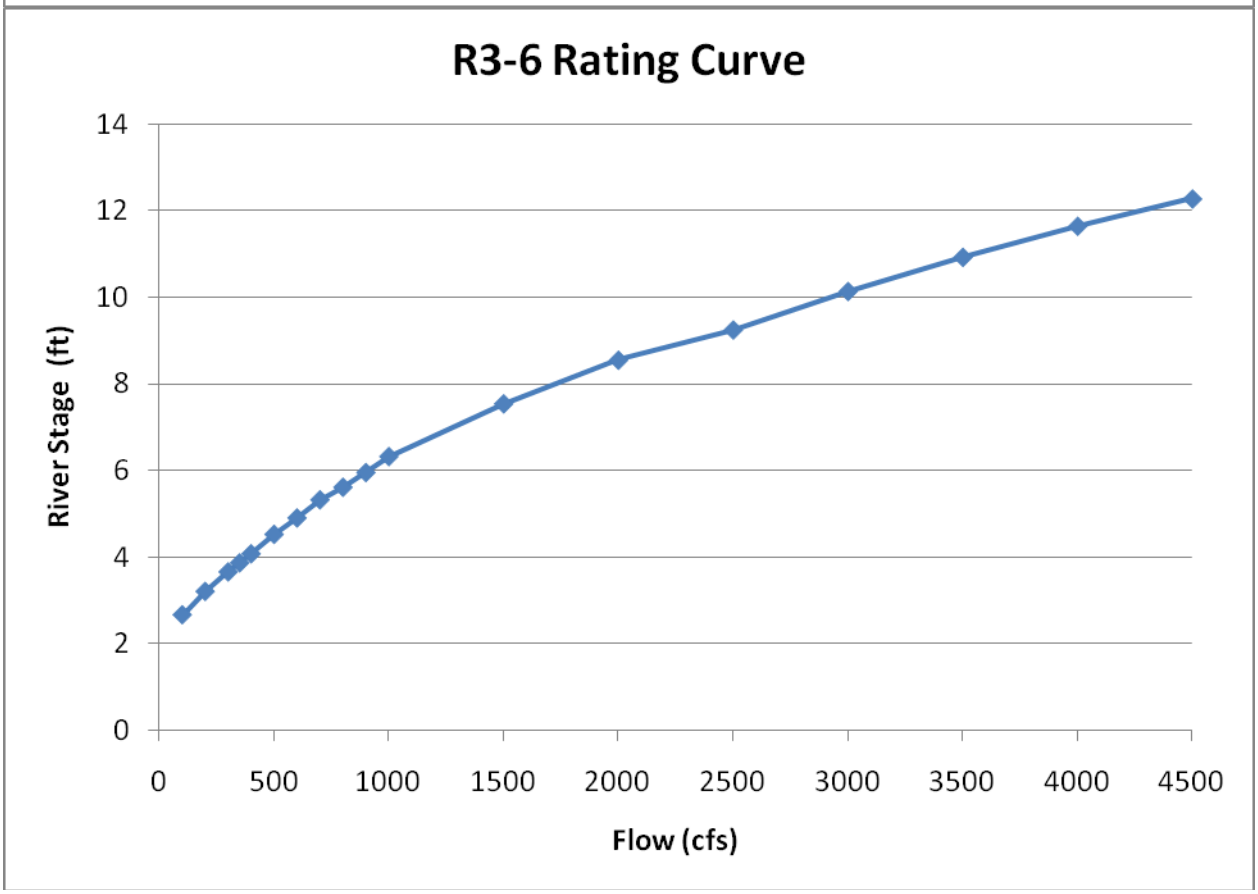

MW-49B Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
Flow (cfs)

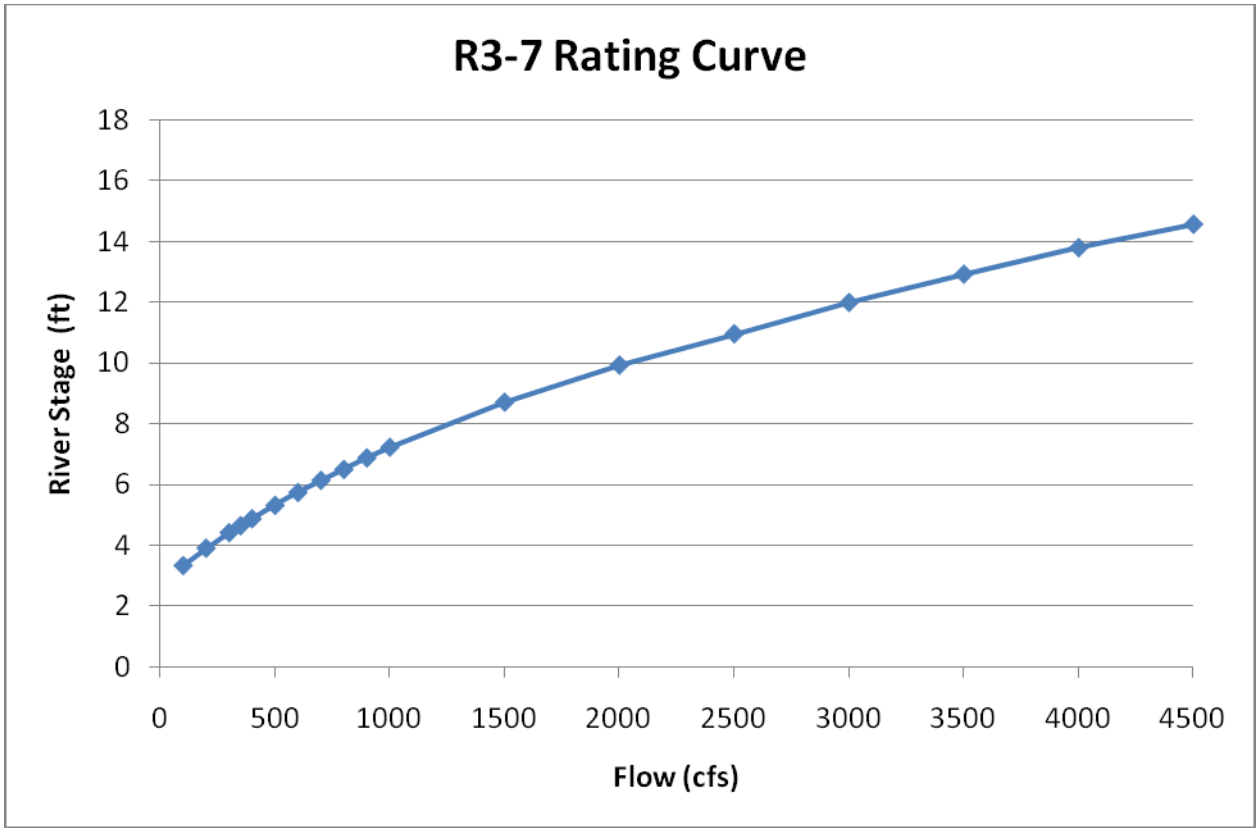

MW-54B Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)

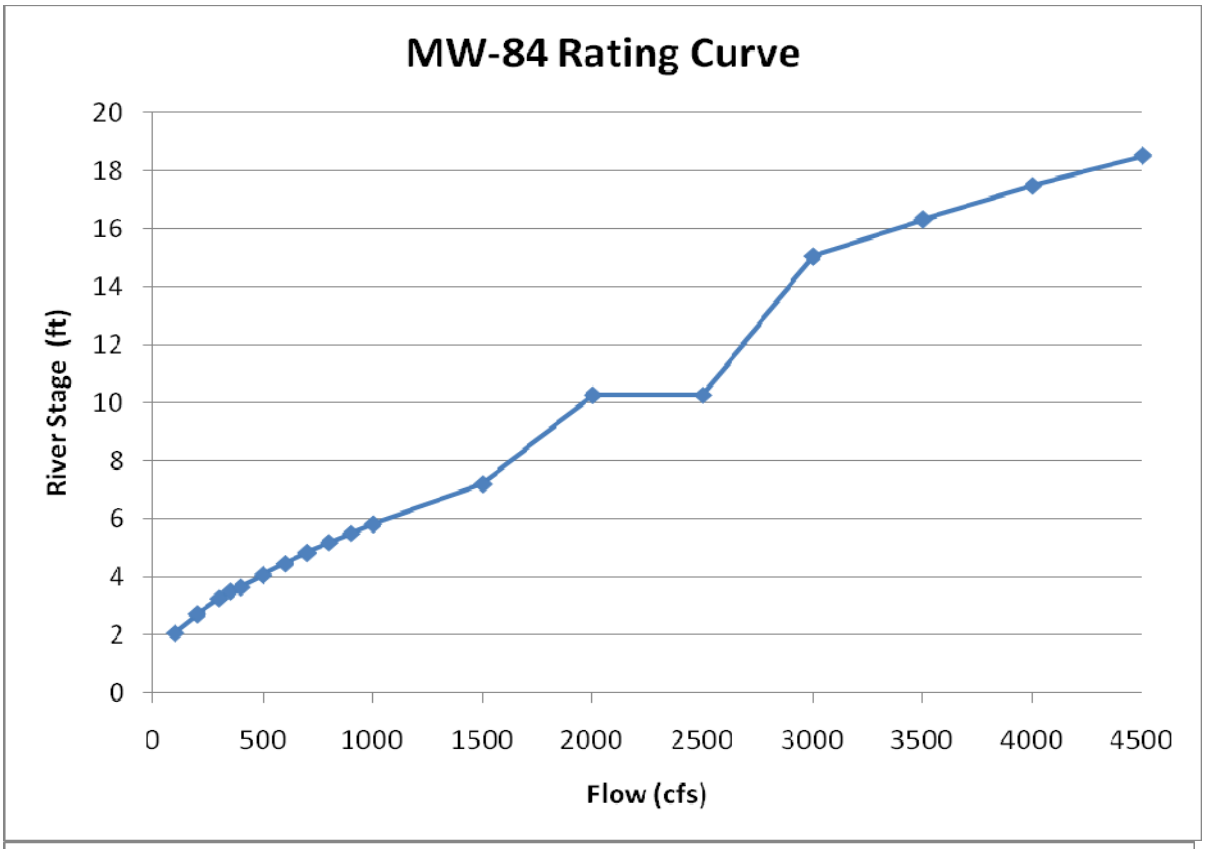

MW-55B Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)

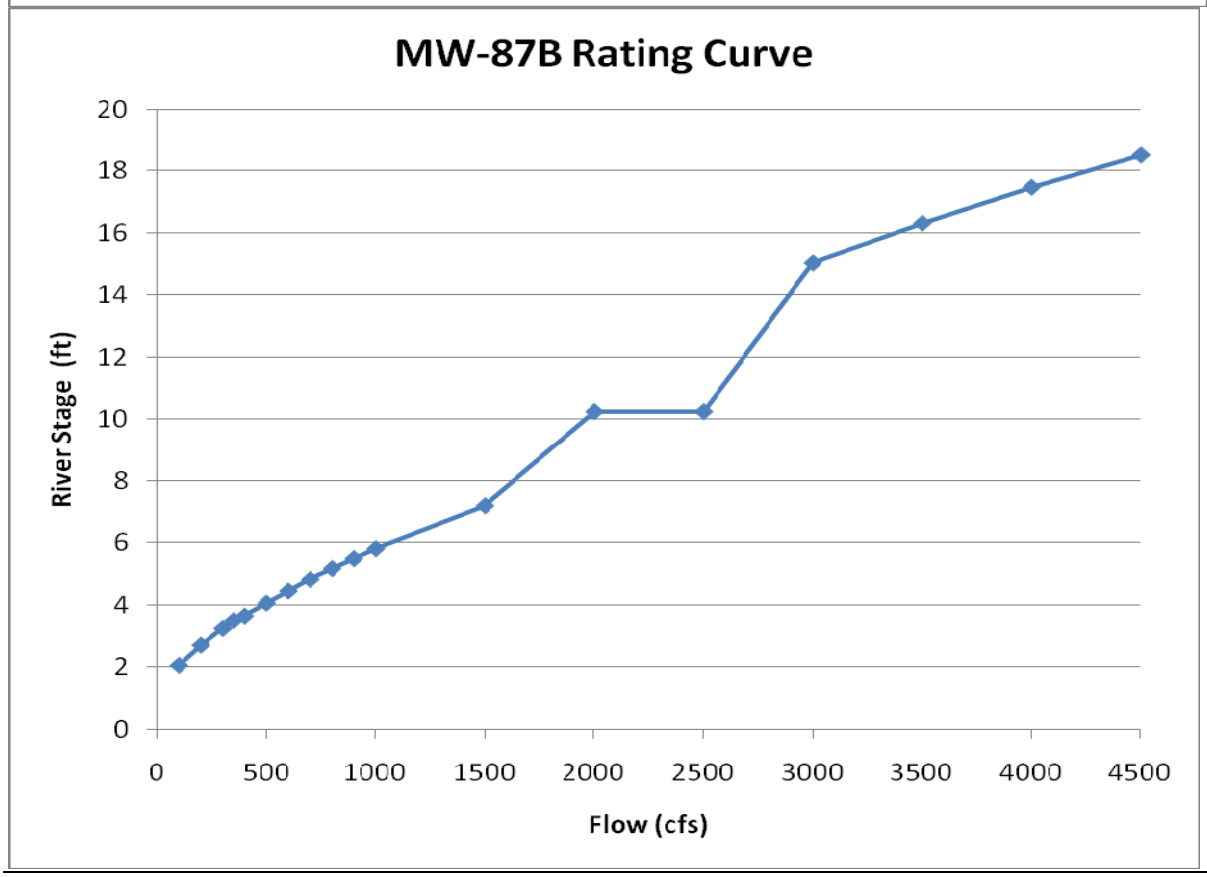

R2B-1 Rating Curve
River Stage (ft)
0
1
2
3
4
5
6
7
8
9
10
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)
R2B-2 Rating Curve
River Stage (ft)
0
1
2
3
4
5
6
7
8
9
10
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)


R3-1 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
16
18
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)


R3-6 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)


R3-7 Rating Curve
River Stage (ft)
18
16
14
12
10
8
6
4
2
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)


MW-84 Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
16
18
20
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)


MW-87B Rating Curve
River Stage (ft)
0
2
4
6
8
10
12
14
16
18
20
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Flow (cfs)