

***APPENDIX B***  
***FINAL CALIBRATION REPORT***

**SPOKANE RIVER INSTREAM FLOW STUDY**  
WRIA 54  
WRIA 57



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**Table 1a. Velocity Adjustment Factors for Spokane River, Study Site 1.****STUDY SITE 1**

Flow	Trans 1		Trans 2		Trans 3		Trans 4		Trans 5	
	Orig	Rev	Orig	Rev	Orig	Rev	Orig	Rev	Orig	Rev
350	0.3887	0.3888	0.2500	0.2500	0.2709	0.2709	0.2304	0.2304	0.2170	0.2170
400	0.4274	0.4275	0.2783	0.2783	0.3011	0.3011	0.2573	0.2573	0.2421	0.2421
500	0.4966	0.4966	0.3309	0.3309	0.3572	0.3572	0.3077	0.3077	0.2893	0.2893
750	0.6323	0.6323	0.4434	0.4434	0.4760	0.4760	0.4173	0.4173	0.3914	0.3914
1,000	0.7300	0.7300	0.5349	0.5349	0.5712	0.5712	0.5080	0.5080	0.4755	0.4755
1,500	0.8556	0.8555	0.6733	0.6733	0.7128	0.7128	0.6475	0.6475	0.6050	0.6050
2,000	0.9263	0.9262	0.7719	0.7719	0.8108	0.8108	0.7471	0.7471	0.6977	0.6977
2,500	0.9662	0.9661	0.8441	0.8441	0.8806	0.8806	0.8189	0.8189	0.7659	0.7659
3,000	0.9874	0.9873	0.8980	0.8980	0.9311	0.9311	0.8710	0.8710	0.8170	0.8170
3,500	0.9972	0.9972	0.9382	0.9382	0.9675	0.9675	0.9089	0.9089	0.8557	0.8557
4,000	0.9991	0.9991	0.9685	0.9685	0.9939	0.9939	0.9367	0.9366	0.8854	0.8854
4,500	0.9962	0.9961	0.9911	0.9912	1.0130	1.0130	0.9569	0.9568	0.9080	0.9080
5,000	0.9900	0.9899	1.0079	1.0082	1.0265	1.0265	0.9715	0.9714	0.9251	0.9251
5,500	0.9818	0.9816	1.0198	1.0205	1.0358	1.0358	0.9817	0.9816	0.9378	0.9378
6,000	0.9720	0.9718	1.0281	1.0293	1.0418	1.0418	0.9886	0.9885	0.9473	0.9472
6,500	0.9614	0.9611	1.0337	1.0353	1.0453	1.0453	0.9930	0.9928	0.9542	0.9541
7,000	0.9503	0.9500	1.0370	1.0392	1.0468	1.0468	0.9955	0.9952	0.9591	0.9589
7,500	0.9390	0.9386	1.0386	1.0412	1.0468	1.0468	0.9964	0.9961	0.9624	0.9620
8,000	0.9276	0.9272	1.0388	1.0419	1.0455	1.0455	0.9961	0.9957	0.9643	0.9639
8,500	0.9164	0.9158	1.0379	1.0414	1.0434	1.0434	0.9948	0.9943	0.9653	0.9646
9,000	0.9053	0.9046	1.0360	1.0400	1.0405	1.0405	0.9927	0.9921	0.9653	0.9645
9,500	0.8944	0.8936	1.0334	1.0377	1.0370	1.0370	0.9901	0.9894	0.9647	0.9637
10,000	0.8837	0.8828	1.0302	1.0348	1.0330	1.0330	0.9869	0.9861	0.9635	0.9623
10,500	0.8733	0.8723	1.0266	1.0315	1.0287	1.0287	0.9834	0.9824	0.9618	0.9604
11,000	0.8632	0.8621	1.0226	1.0277	1.0240	1.0240	0.9796	0.9785	0.9598	0.9580
12,000	0.8438	0.8425	1.0136	1.0192	1.0141	1.0141	0.9712	0.9699	0.9548	0.9525
13,000	0.8255	0.8239	1.0039	1.0098	1.0037	1.0037	0.9623	0.9608	0.9489	0.9461
14,000	0.8082	0.8064	0.9939	1.0001	0.9931	0.9931	0.9531	0.9514	0.9425	0.9391
15,000	0.7919	0.7900	0.9838	0.9902	0.9824	0.9824	0.9438	0.9418	0.9358	0.9318
16,000	0.7766	0.7745	0.9737	0.9802	0.9717	0.9717	0.9345	0.9323	0.9288	0.9243

Table 1b. Velocity Adjustment Factors for Spokane River, Study Site 2.

Flow	Trans 1		Trans 2	
	Orig	Rev	Orig	Rev
350	0.3196	0.3198	0.2255	0.2361
400	0.3443	0.3446	0.2464	0.2560
500	0.3879	0.3883	0.2845	0.2921
750	0.4731	0.4739	0.3645	0.3678
1,000	0.5379	0.5390	0.4297	0.4294
1,500	0.6356	0.6372	0.5332	0.5281
2,000	0.7089	0.7110	0.6148	0.6073
2,500	0.7682	0.7706	0.6827	0.6744
3,000	0.8182	0.8211	0.7410	0.7332
3,500	0.8618	0.8649	0.7922	0.7856
4,000	0.9005	0.9040	0.8379	0.8331
4,500	0.9355	0.9392	0.8793	0.8768
5,000	0.9674	0.9713	0.9171	0.9173
5,500	0.9969	1.0010	0.9520	0.9551
6,000	1.0243	1.0286	0.9844	0.9907
6,500	1.0499	1.0544	1.0147	1.0243
7,000	1.0740	1.0786	1.0431	1.0561
7,500	1.0967	1.1015	1.0699	1.0865
8,000	1.1183	1.1231	1.0953	1.1155
8,500	1.1388	1.1437	1.1195	1.1434
9,000	1.1584	1.1634	1.1425	1.1701
9,500	1.1771	1.1822	1.1645	1.1959
10,000	1.1951	1.2002	1.1855	1.2207
10,500	1.2123	1.2175	1.2057	1.2448
11,000	1.2290	1.2342	1.2252	1.2680
11,500	1.2605	1.2658	1.2619	1.3125
13,000	1.2901	1.2953	1.2963	1.3545
14,000	1.3180	1.3232	1.3285	1.3944
15,000	1.3443	1.3495	1.3589	1.4324
16,000	1.3693	1.3745	1.3876	1.4687

<b>Table 2. Changes to original data decks, Spokane River Study Sites 1 and 2.</b>				
Trans	Station	Orig	Rev	Other
SS1T1	19.0			n -5.4009 to 0.5
	20.5			n -6.5285 to 0.5
	22.0			n 7.1310 to 0.6
	23.5			n 7.8507 to 0.6
	25.0			n 9.2015 to 0.6
	29.5			n 21.6477 to 0.8
	205.8			n 0.0262 to 0.022
	206.8			n 0.0229 to 0.024
	209.8			n 0.3077 to 0.3
SS1T2	16.5	4.07	3.5	n 0.0157 to 0.025
	18.0	4.67	4.0	n 0.0169 to 0.025
	18.5	4.66	4.1	n 0.0169 to 0.025
	241.0			n 0.1571 to 0.10
SS1T3	24.5			n 9.6820 to 0.7
	26.0			n 3.2273 to 0.7
	27.5			n 1.6329 to 0.9
	29.0			n 1.7046 to 0.9
	30.1			n 2.2250 to 0.9
	32.0			n 2.2335 to 0.9
	33.5			n 2.6506 to 0.9
	148.0	6.94	6.7	
	228.4			n 0.8007 to 0.4
SS1T4	15.5			n 5.5822 to 0.35
	17.0			n 0.7128 to 0.3
	18.5			n 0.3219 to 0.25
	36.0	0.64	0.78	
	227.7			n 0.3044 to 0.25
	229.2			n 0.3982 to 0.18
SS1T5	18.0			n 0.6841 to 0.30
	231.2			n 5.8182 to 0.18
SS2T1	31.0			n 0.4310 to 0.20
	344.0			n 0.0358 to 0.039
	348.0			n 0.0312 to 0.0380
	352.0			n 0.0351 to 0.038
	368.5			n 0.1395 to 0.1
SS2T2	26.0			n 0.3809 to 0.23
	302.0			n 0.4082 to 0.20
	302.2			n 0.4046 to 0.20

**Table 3.1- Summary of calibration details for original and revised input decks**  
**Calibration details for Spokane River, High Flow**  
 Study Site 1, Transect 1

Rv	WSE (ft)		348.00		870		3,157		6,622			16,555				
	Pt	Sta	Disch (cfs)	Elev	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	Rev			
	1	0.00		98.95												
	2	0.50		98.73												
	3	4.00		97.19												
	4	8.00		96.43												
	5	12.00		95.50												
	6	14.00		95.07												
	7	14.40		94.98												
	8	16.60		94.68								0.00	#	0.01	#	
	9	17.50		94.38								0.00	#	0.05	#	
*	10	19.00		93.93							-0.01	-0.01	#	0.07	#	
*	11	20.50		93.58							-0.01	-0.01	#	0.10	#	
*	12	22.00		93.38							0.01	0.01	#	0.13	#	
*	13	23.50		93.13							0.01	0.01	#	0.13	#	
*	14	25.00		92.63							0.01	0.01	#	0.15	#	
	15	26.50		92.68							0.60	0.58	#	0.57	#	
	16	28.00		92.48								0.00	#	0.11	#	
*	17	29.50		91.98				0.00	0.02	0.01	0.15	0.14	#	0.13	#	
	18	31.00		93.38							0.15	0.14	#	0.14	#	
	19	36.00		91.43				1.40	1.40	4.28	4.10	4.10	#	4.10	#	
	20	40.00		90.65				2.16	2.16	4.53	4.34	4.34	#	4.34	#	
	21	44.00		89.80			0.25	0.25	2.59	2.59	4.49	4.30	4.30	#	4.30	#
	22	48.00		89.26	0.09	0.09	0.74	0.74	2.87	2.87	4.62	4.43	4.43	#	4.43	#
	23	52.00		89.08	0.23	0.23	0.92	0.92	3.16	3.16	4.99	4.78	4.78	#	4.78	#
	24	56.00		88.16	0.59	0.59	1.38	1.38	3.43	3.43	5.00	4.79	4.79	#	4.79	#
	25	60.00		87.83	0.68	0.68	1.50	1.50	3.52	3.52	5.02	4.81	4.81	#	4.81	#
	26	64.00		86.82	0.82	0.82	1.68	1.68	3.48	3.48	4.70	4.51	4.50	#	4.50	#
	27	68.00		86.39	0.92	0.92	1.83	1.83	3.68	3.68	4.88	4.68	4.68	#	4.68	#
	28	72.00		86.33	1.02	1.02	2.04	2.04	4.07	4.07	5.39	5.17	5.17	#	5.17	#
	29	76.00		86.50	0.98	0.98	1.97	1.97	3.98	3.98	5.30	5.08	5.08	#	5.08	#
	30	80.00		86.70	0.91	0.91	1.84	1.84	3.78	3.78	5.08	4.87	4.87	#	4.87	#
	31	84.00		86.77	0.89	0.89	1.80	1.80	3.73	3.73	5.02	4.81	4.81	#	4.81	#
	32	88.00		86.93	0.94	0.94	1.92	1.92	4.04	4.04	5.48	5.25	5.25	#	5.25	#
	33	92.00		86.94	0.92	0.92	1.89	1.89	3.96	3.96	5.38	5.16	5.16	#	5.16	#
	34	96.00		87.06	0.94	0.94	1.94	1.94	4.13	4.13	5.64	5.41	5.40	#	5.40	#
	35	100.00		87.06	0.95	0.95	1.95	1.95	4.14	4.14	5.66	5.43	5.42	#	5.42	#
	36	104.00		87.01	0.96	0.96	1.96	1.96	4.15	4.15	5.66	5.43	5.42	#	5.42	#
	37	108.00		87.07	1.00	1.00	2.06	2.06	4.38	4.38	5.98	5.73	5.73	#	5.73	#
	38	112.00		87.06	0.90	0.90	1.85	1.85	3.94	3.94	5.38	5.16	5.16	#	5.16	#
	39	116.00		86.92	0.95	0.95	1.95	1.95	4.09	4.09	5.55	5.32	5.32	#	5.32	#
	40	124.00		87.07	0.95	0.95	1.96	1.96	4.16	4.16	5.69	5.45	5.45	#	5.45	#
	41	128.00		86.91	0.96	0.96	1.96	1.96	4.10	4.10	5.56	5.33	5.33	#	5.33	#
	42	132.00		86.72	1.11	1.11	2.26	2.26	4.65	4.65	6.25	5.99	5.99	#	5.99	#
	43	136.00		86.67	1.04	1.04	2.10	2.10	4.31	4.31	5.78	5.54	5.54	#	5.54	#
	44	140.00		86.07	1.19	1.19	2.34	2.34	4.60	4.60	6.03	5.78	5.78	#	5.78	#
	45	144.00		86.35	1.13	1.13	2.25	2.25	4.49	4.49	5.95	5.70	5.70	#	5.70	#
	46	148.00		86.22	1.05	1.05	2.09	2.09	4.14	4.14	5.45	5.22	5.22	#	5.22	#
	47	152.00		85.88	1.27	1.27	2.50	2.50	4.85	4.85	6.31	6.05	6.05	#	6.05	#
	48	156.00		85.97	1.29	1.29	2.53	2.53	4.94	4.94	6.45	6.18	6.18	#	6.18	#
	49	160.00		85.87	1.24	1.24	2.42	2.42	4.70	4.70	6.12	5.87	5.86	#	5.86	#
	50	168.00		86.41	1.05	1.05	2.11	2.11	4.23	4.23	5.62	5.39	5.39	#	5.39	#
	51	172.00		86.19	1.23	1.23	2.44	2.44	4.82	4.82	6.35	6.09	6.09	#	6.09	#
	52	176.00		86.38	1.11	1.11	2.22	2.22	4.45	4.45	5.90	5.66	5.65	#	5.65	#
	53	180.00		86.51	0.97	0.97	1.95	1.95	3.94	3.94	5.25	5.03	5.03	#	5.03	#
	54	184.00		88.53	0.53	0.53	1.37	1.37	3.75	3.75	5.62	5.39	5.39	#	5.39	#
	55	188.00		88.82	0.37	0.37	1.10	1.10	3.33	3.33	5.13	4.92	4.92	#	4.92	#
	56	192.00		89.23	0.10	0.10	0.64	0.64	2.41	2.41	3.87	3.71	3.71	#	3.71	#
	57	196.00		90.16					1.67	1.67	3.10	2.97	2.97	#	2.97	#
	58	202.81		92.58						2.06	1.97	1.97	#	1.97	#	
	59	203.81		93.38						1.04	1.00	1.00	#	1.00	#	
	60	204.81		93.13						3.00	2.88	2.87	#	2.87	#	
*	61	205.81		93.98						2.59	2.48	2.28	#	2.28	#	
*	62	206.81		94.08						2.13	2.04	1.95	#	1.95	#	
	63	207.81		93.68						1.72	1.65	1.65	#	1.65	#	
	64	208.81		93.93						0.75	0.72	0.72	#	0.72	#	
*	65	209.81		93.98						0.17	0.16	0.17	#	0.17	#	
	66	210.81		94.68							0.07	#	0.08	#	0.08	#
	67	212.36		94.98							0.01	#	0.01	#	0.01	#
	68	217.00		96.11							#	#	#	#	#	#
	69	222.00		96.95							#	#	#	#	#	#
	70	226.00		97.69							#	#	#	#	#	#
	71	228.00		99.07							#	#	#	#	#	#
	72	230.00		98.33							#	#	#	#	#	#
	73	233.00		98.83							#	#	#	#	#	#
	74	235.00		99.07							#	#	#	#	#	#
	75	236.00		100.09							#	#	#	#	#	#
	76	236.81		100.25							#	#	#	#	#	#

Total

#VALUE! \* ##### \*

Note: an \* means the modeled velocity exceeds the measured velocity by 0.2 ft/sec or 20%

Table 3.2- Summary of calibration details for original and revised input decks															
Calibration details for Spokane River, High Flow															
Study Site 1, Transect 2															
WSE (ft)				89.58		90.23		92.47		95.27			102.00		
Disch (cfs)				348.00		870.00		3157.00		6622.00			16555.00		
Rv	Pt	Sta	Elev	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	* Rev *	Orig	Rev	
	1	0.0	98.65											1.58	1.59
	2	0.5	98.45											1.64	1.65
	3	5.0	96.75											2.14	2.15
	4	8.0	95.84											2.38	2.39
	5	10.3	95.29											2.52	2.53
	6	12.0	94.89							0.38	0.39	0.39		2.62	2.64
	7	13.5	94.24							0.21	0.22	0.22		0.79	0.79
	8	15.0	94.09							0.78	0.81	0.81		2.70	2.72
*	9	16.5	93.89							4.07	4.21	2.65 #		12.90	8.18
*	10	18.0	93.39							4.67	4.83	3.27 #		12.53	8.51
*	11	18.5	93.39							4.66	4.82	3.27 #		12.50	8.51
	12	21.0	92.29					0.32	0.32	2.32	2.39	2.40		4.94	4.98
	13	22.5	92.29					0.35	0.35	2.54	2.62	2.63		5.41	5.45
	14	24.0	92.29					0.33	0.33	2.34	2.42	2.42		5.00	5.03
	15	32.0	91.49					0.53	0.53	1.43	1.48	1.48		2.75	2.76
	16	36.0	91.05					0.62	0.62	1.41	1.46	1.46		2.59	2.60
	17	40.0	90.33					0.78	0.78	1.50	1.55	1.55		2.58	2.60
	18	44.0	90.17			0.04	0.04	0.85	0.85	1.59	1.64	1.65		2.70	2.72
	19	48.0	89.82			0.13	0.13	0.83	0.83	1.47	1.52	1.52		2.44	2.46
	20	52.0	89.76			0.22	0.22	1.32	1.32	2.33	2.41	2.41		3.85	3.88
	21	56.0	89.71			0.18	0.18	1.04	1.04	1.82	1.88	1.89		3.00	3.02
	22	60.0	89.52	0.02	0.02	0.22	0.22	1.05	1.05	1.80	1.86	1.87		2.93	2.95
	23	64.0	89.38	0.04	0.04	0.20	0.20	0.89	0.89	1.51	1.56	1.56		2.44	2.45
	24	68.0	89.25	0.05	0.05	0.22	0.22	0.92	0.92	1.54	1.59	1.60		2.46	2.48
	25	72.0	88.98	0.06	0.06	0.19	0.19	0.71	0.71	1.16	1.20	1.20		1.83	1.84
	26	76.0	88.74	0.11	0.11	0.33	0.33	1.14	1.14	1.82	1.88	1.89		2.83	2.85
	27	80.0	88.52	0.12	0.12	0.33	0.33	1.08	1.08	1.70	1.76	1.76		2.62	2.63
	28	84.0	88.05	0.10	0.10	0.26	0.26	0.77	0.77	1.18	1.22	1.22		1.78	1.79
	29	88.0	87.52	0.13	0.13	0.32	0.32	0.88	0.88	1.31	1.36	1.36		1.93	1.94
	30	92.0	86.96	0.24	0.24	0.56	0.56	1.48	1.48	2.13	2.20	2.21		3.07	3.09
	31	96.0	86.54	0.24	0.24	0.54	0.54	1.37	1.37	1.95	2.02	2.02		2.77	2.79
	32	100.0	86.21	0.27	0.27	0.59	0.59	1.47	1.47	2.07	2.14	2.15		2.91	2.93
	33	104.0	85.95	0.30	0.30	0.66	0.66	1.63	1.63	2.27	2.35	2.35		3.16	3.18
	34	108.0	85.69	0.31	0.31	0.67	0.67	1.64	1.64	2.27	2.35	2.35		3.14	3.16
	35	112.0	85.30	0.29	0.29	0.63	0.63	1.50	1.50	2.05	2.12	2.12		2.80	2.82
	36	116.0	85.05	0.29	0.29	0.62	0.62	1.48	1.48	2.01	2.08	2.08		2.73	2.75
	37	120.0	84.86	0.36	0.36	0.78	0.78	1.84	1.84	2.49	2.58	2.58		3.37	3.39
	38	124.0	84.73	0.36	0.36	0.77	0.77	1.79	1.79	2.42	2.50	2.51		3.26	3.28
	39	128.0	84.75	0.36	0.36	0.77	0.77	1.80	1.80	2.43	2.51	2.52		3.28	3.30
	40	132.0	84.67	0.38	0.38	0.81	0.81	1.89	1.89	2.55	2.64	2.64		3.43	3.45
	41	136.0	84.78	0.42	0.42	0.91	0.91	2.13	2.13	2.87	2.97	2.97		3.87	3.90
	42	140.0	84.90	0.51	0.51	1.10	1.10	2.59	2.59	3.50	3.62	3.63		4.74	4.77
	43	144.0	84.89	0.55	0.55	1.19	1.19	2.79	2.79	3.78	3.91	3.92		5.11	5.15
	44	148.0	85.04	0.61	0.61	1.31	1.31	3.10	3.10	4.21	4.36	4.36		5.72	5.76
	45	152.0	85.12	0.66	0.66	1.42	1.42	3.38	3.38	4.60	4.76	4.77		6.26	6.30
	46	156.0	84.97	0.63	0.63	1.36	1.36	3.21	3.21	4.36	4.51	4.52		5.91	5.95
	47	160.0	85.01	0.60	0.60	1.28	1.28	3.03	3.03	4.12	4.26	4.27		5.59	5.63
	48	164.0	85.23	0.62	0.62	1.35	1.35	3.22	3.22	4.39	4.54	4.55		5.99	6.03
	49	168.0	85.00	0.64	0.64	1.38	1.38	3.27	3.27	4.44	4.59	4.60		6.02	6.07
	50	172.0	84.82	0.68	0.68	1.46	1.46	3.42	3.42	4.62	4.78	4.79		6.24	6.28
	51	176.0	84.53	0.90	0.90	1.91	1.91	4.45	4.45	5.98	6.19	6.20		8.02	8.07
	52	180.0	84.26	0.81	0.81	1.73	1.73	3.99	3.99	5.32	5.50	5.51		7.09	7.14
	53	184.0	84.73	0.88	0.88	1.89	1.89	4.43	4.43	5.97	6.18	6.19		8.04	8.10
	54	188.0	84.60	0.79	0.79	1.70	1.70	3.96	3.96	5.32	5.50	5.51		7.15	7.20
	55	192.0	84.39	0.86	0.86	1.83	1.83	4.24	4.24	5.67	5.87	5.88		7.58	7.63
	56	204.0	84.59	0.75	0.75	1.61	1.61	3.74	3.74	5.03	5.20	5.21		6.76	6.80
	57	208.0	84.91	0.55	0.55	1.19	1.19	2.81	2.81	3.80	3.93	3.94		5.14	5.18
	58	212.0	85.28	0.85	0.85	1.85	1.85	4.42	4.42	6.04	6.25	6.26		8.26	8.31
	59	216.0	85.99	0.79	0.79	1.74	1.74	4.32	4.32	6.02	6.23	6.24		8.40	8.45
	60	220.0	87.13	0.57	0.57	1.32	1.32	3.53	3.53	5.14	5.32	5.33		7.45	7.50
	61	224.0	88.32	0.37	0.37	0.96	0.96	3.00	3.00	4.65	4.81	4.82		7.09	7.13
	62	228.0	87.81	0.43	0.43	1.05	1.05	3.04	3.04	4.57	4.73	4.74		6.81	6.85
	63	232.0	89.63			0.49	0.49	2.59	2.59	4.50	4.66	4.66		7.37	7.42
	64	236.0	90.54					2.29	2.29	4.58	4.74	4.75		8.02	8.08
	65	237.0	92.69							1.05	1.08	1.08		2.39	2.41
	66	238.0	93.19							1.00	1.03	1.03		2.53	2.55
	67	239.0	94.19							0.82	0.85	0.85		2.99	3.01
	68	240.0	94.09							0.72	0.74	0.75		2.49	2.51
*	69	241.0	94.44							0.29	0.30	0.47		1.23	1.95
	70	242.0	95.19								0.06	0.10		1.15	1.82
	71	242.6	95.29											1.14	1.80
	72	243.0	96.10											1.04	1.65
	73	246.0	96.64											0.98	1.55
	74	249.0	97.01											0.93	1.48
	75	251.5	98.85											0.69	1.08
	76	252.0	99.34											0.61	0.97
Total										0	*	3	*		
Note: an * means the modeled velocity exceeds the measured velocity by 0.2 ft/sec or 20%															

**Table 3.3- Summary of calibration details for original and revised input decks**

**Calibration details for Spokane River, High Flow**  
Study Site 1, Transect 3

Rv	Pt	WSE (ft)		87.78		88.32		89.81		91.95			97.26	
		Sta	Elev	427.60		1069.00		3157.00		6622.00			16555.00	
				Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig *	Rev *	Orig	Rev
	1	0.0	95.31										0.02	0.24
	2	0.1	95.19										0.02	0.25
	3	1.0	93.87										0.03	0.35
	4	5.0	93.32										0.03	0.38
	5	6.0	92.97										0.03	0.41
	6	10.0	92.88										0.03	0.41
	7	16.0	92.06										0.03	0.46
	8	18.0	91.77								0.00	0.05	0.03	0.48
	9	18.8	91.94								0.00	0.01	0.03	0.47
	10	20.0	91.74								0.00	0.06	0.03	0.48
	11	21.5	91.89								0.00	0.03	0.03	0.47
	12	23.0	91.54								0.01	0.09	0.04	0.49
*	13	24.5	91.14							0.01	0.01	0.14	0.04	0.52
*	14	26.0	91.14							0.03	0.03	0.14	0.11	0.52
*	15	27.5	90.44							0.09	0.09	0.17	0.24	0.43
*	16	29.0	90.34							0.09	0.09	0.18	0.23	0.44
*	17	30.1	89.94							0.08	0.08	0.21	0.18	0.45
*	18	32.0	89.54					0.02	0.05	0.09	0.09	0.23	0.19	0.47
*	19	33.5	89.34					0.02	0.07	0.08	0.08	0.25	0.16	0.48
	20	35.0	88.94					0.56	0.56	1.36	1.42	1.42	2.59	2.58
	21	36.5	88.64					0.60	0.60	1.28	1.34	1.34	2.35	2.34
	22	40.0	87.23	0.39	0.39	1.15	1.15	3.26	3.27	5.18	5.42	5.42	8.29	8.25
	23	44.0	86.43	0.75	0.75	1.75	1.75	4.11	4.11	6.05	6.33	6.33	9.18	9.14
	24	48.0	85.34	1.04	1.04	2.22	2.22	4.63	4.63	6.37	6.66	6.67	9.13	9.09
	25	52.0	84.63	1.16	1.16	2.41	2.41	4.81	4.81	6.42	6.71	6.72	8.94	8.90
	26	56.0	84.27	1.25	1.25	2.59	2.59	5.07	5.07	6.68	6.99	6.99	9.18	9.14
	27	60.0	83.92	1.19	1.19	2.44	2.44	4.71	4.71	6.14	6.42	6.42	8.33	8.30
	28	64.0	83.57	1.19	1.19	2.42	2.42	4.61	4.61	5.95	6.22	6.23	7.99	7.95
	29	68.0	83.49	1.12	1.12	2.27	2.27	4.32	4.33	5.57	5.82	5.83	7.46	7.42
	30	72.0	83.37	1.02	1.02	2.06	2.06	3.90	3.91	5.01	5.24	5.24	6.68	6.65
	31	76.0	83.59	1.01	1.01	2.05	2.05	3.91	3.91	5.05	5.28	5.28	6.78	6.75
	32	80.0	83.70	1.26	1.26	2.57	2.57	4.92	4.93	6.38	6.67	6.68	8.60	8.56
	33	84.0	83.50	1.19	1.19	2.42	2.42	4.60	4.61	5.93	6.20	6.20	7.94	7.91
	34	88.0	83.60	1.07	1.07	2.18	2.18	4.16	4.17	5.38	5.63	5.63	7.23	7.19
	35	92.0	84.15	1.09	1.09	2.24	2.24	4.37	4.37	5.74	6.00	6.01	7.85	7.82
	36	96.0	84.68	0.90	0.90	1.88	1.89	3.77	3.77	5.04	5.27	5.27	7.03	7.00
	37	100.0	85.27	0.90	0.90	1.92	1.92	3.98	3.98	5.46	5.71	5.71	7.81	7.77
	38	104.0	85.82	0.96	0.96	2.12	2.13	4.62	4.62	6.52	6.82	6.82	9.57	9.52
	39	112.0	86.00	0.86	0.86	1.93	1.93	4.26	4.27	6.09	6.37	6.37	9.02	8.98
	40	116.0	85.65	1.01	1.01	2.21	2.21	4.72	4.72	6.60	6.90	6.91	9.60	9.56
	41	120.0	84.93	1.13	1.13	2.38	2.38	4.83	4.84	6.53	6.83	6.83	9.20	9.16
	42	124.0	85.65	1.05	1.05	2.28	2.28	4.88	4.89	6.83	7.14	7.15	9.94	9.89
	43	128.0	85.15	0.95	0.95	2.01	2.01	4.13	4.14	5.64	5.90	5.90	8.02	7.98
	44	132.0	85.80	0.66	0.66	1.46	1.46	3.17	3.17	4.47	4.67	4.68	6.55	6.52
	45	136.0	85.68	0.86	0.86	1.88	1.89	4.04	4.04	5.66	5.92	5.92	8.25	8.21
	46	140.0	84.35	1.14	1.14	2.36	2.37	4.65	4.66	6.15	6.43	6.43	8.47	8.43
	47	144.0	85.28	1.12	1.12	2.39	2.39	4.96	4.96	6.81	7.12	7.13	9.74	9.70
*	48	148.0	86.13	0.94	0.91	2.14	2.07	4.82	4.66	6.94	7.26	7.01	10.35	9.95
	49	152.0	85.56	0.99	0.99	2.14	2.14	4.55	4.55	6.33	6.62	6.62	9.17	9.13
	50	156.0	84.41	0.96	0.96	1.99	1.99	3.92	3.93	5.20	5.44	5.44	7.18	7.15
	51	160.0	85.24	0.98	0.99	2.10	2.10	4.35	4.35	5.96	6.23	6.24	8.51	8.47
	52	164.0	85.23	0.96	0.96	2.04	2.05	4.23	4.23	5.79	6.05	6.06	8.26	8.22
	53	168.0	84.57	0.88	0.88	1.84	1.84	3.65	3.66	4.87	5.09	5.10	6.76	6.73
	54	172.0	84.57	1.00	1.00	2.09	2.09	4.15	4.15	5.53	5.78	5.79	7.68	7.65
	55	176.0	84.38	0.72	0.72	1.49	1.49	2.94	2.94	3.89	4.07	4.07	5.37	5.34
	56	180.0	85.40	0.73	0.73	1.56	1.56	3.27	3.28	4.52	4.73	4.73	6.50	6.47
	57	184.0	86.08	0.66	0.66	1.49	1.49	3.32	3.33	4.77	4.99	4.99	7.10	7.06
	58	188.0	86.65	0.61	0.61	1.48	1.48	3.60	3.60	5.39	5.64	5.64	8.29	8.25
	59	192.0	87.69	0.10	0.10	0.68	0.68	2.44	2.44	4.13	4.32	4.32	6.86	6.83
	60	196.0	88.30			0.07	0.07	1.97	1.97	3.76	3.93	3.93	6.63	6.60
	61	200.0	88.87					1.11	1.11	2.61	2.73	2.73	4.93	4.91
	62	204.0	89.43					0.52	0.52	1.97	2.06	2.06	4.07	4.05
	63	208.0	89.70					0.15	0.15	1.18	1.23	1.23	2.57	2.56
	64	212.0	89.56					0.38	0.38	1.84	1.92	1.93	3.89	3.88
	65	217.9	89.54					0.19	0.19	0.89	0.93	0.93	1.88	1.87
	66	219.4	90.69							1.49	1.56	1.56	4.35	4.33
	67	220.9	90.54							1.26	1.32	1.32	3.47	3.45
	68	222.4	91.29							0.81	0.85	0.85	3.42	3.41
	69	223.9	91.29							0.69	0.72	0.72	2.92	2.90
	70	225.4	91.14							0.31	0.32	0.32	1.16	1.16
	71	226.9	91.14							0.15	0.16	0.16	0.56	0.56
*	72	228.4	91.34							0.10	0.10	0.21	0.44	0.88
	73	229.9	91.84								0.03	0.07	0.42	0.83
	74	230.8	91.94								0.01	0.01	0.41	0.82
	75	232.9	92.84										0.36	0.73
	76	238.9	93.85										0.31	0.61
	77	243.9	94.71										0.25	0.50
	78	247.4	96.62										0.10	0.20
	79	247.9	97.16										0.03	0.06

Total

Note: an \* means the modeled velocity exceeds the measured velocity by 0.2 ft/sec or 20%

0 \* 0 \*

**Table 3.4 - Summary of calibration details for original and revised input decks**  
**Calibration details for Spokane River, High Flow**  
 Study Site 1, Transect 4

WSE (ft)		88.30		88.90		90.50		92.74				98.18					
Disch (cfs)		428		1,069		3,157		6,622				16,555					
Rv	Pt	Sta	Elev	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	*	Rev	*	Orig	Rev	
	1	0.00	96.79									#		#		0.02	0.25
	2	0.10	96.52									#		#		0.02	0.28
	3	2.00	96.01									#		#		0.02	0.33
	4	3.00	94.48									#		#		0.03	0.47
	5	4.00	95.08									#		#		0.03	0.42
	6	5.00	93.98									#		#		0.03	0.52
	7	10.00	93.00									#		#		0.04	0.59
	8	13.00	93.00									#		#		0.04	0.59
	9	13.90	92.74								0.00	#	0.00	#		0.04	0.61
*	10	15.50	92.09							0.01	0.01		0.16			0.04	0.66
*	11	17.00	91.94							0.09	0.09		0.21			0.33	0.78
*	12	18.50	91.34							0.29	0.29		0.37			0.78	1.00
	13	20.00	91.34							0.41	0.41		0.41			1.10	1.10
	14	21.50	91.14							0.23	0.23		0.23			0.58	0.57
	15	23.00	91.54							1.83	1.82		1.82			5.35	5.33
	16	24.50	91.24							1.41	1.40		1.40			3.66	3.64
	17	26.00	90.54							1.36	1.35		1.35			2.91	2.90
	18	27.50	90.24				0.32	0.32		1.63	1.62		1.62			3.29	3.27
	19	29.00	90.04				0.56	0.56		2.08	2.06		2.06			4.04	4.02
	20	30.50	89.44				0.83	0.83		2.01	2.00		2.00			3.59	3.57
	21	32.00	90.51							1.02	1.01		1.01			2.17	2.16
*	22	36.00	90.34					0.09	0.11		0.64		0.78			1.32	1.60
	23	40.00	89.99					0.65	0.65		2.26		2.25			4.36	4.35
	24	44.00	89.68					1.09	1.09		2.98		2.96			5.49	5.47
	25	48.00	89.56					1.26	1.26		3.22		3.20			5.84	5.81
	26	52.00	89.42					1.60	1.60		3.83		3.81			6.82	6.79
	27	56.00	89.23					1.64	1.64		3.66		3.64			6.37	6.34
	28	60.00	89.26					1.82	1.82		4.12		4.09			7.20	7.17
	29	64.00	88.97					2.10	2.10		4.34		4.31			7.34	7.31
	30	68.00	88.75			0.28	0.28			2.40	2.40		4.69			7.81	7.77
	31	72.00	88.78			0.21	0.21			2.08	2.08		4.08			6.82	6.79
	32	76.00	88.40			0.55	0.55			2.39	2.39		4.37			7.05	7.02
	33	80.00	88.11	0.15	0.15	0.78	0.78			2.72	2.72		4.77			7.51	7.48
	34	84.00	88.00	0.21	0.21	0.87	0.87			2.87	2.87		4.95			7.73	7.69
	35	88.00	88.06	0.17	0.17	0.79	0.79			2.68	2.68		4.66			7.31	7.28
	36	92.00	87.68	0.32	0.32	0.98	0.98			2.87	2.87		4.77			7.28	7.25
	37	96.00	87.33	0.44	0.44	1.19	1.19			3.19	3.19		5.13			7.65	7.61
	38	100.00	87.01	0.54	0.54	1.36	1.36			3.43	3.43		5.38			7.87	7.83
	39	104.00	86.77	0.58	0.58	1.42	1.42			3.45	3.45		5.32			7.68	7.64
	40	108.00	86.60	0.60	0.60	1.44	1.44			3.42	3.42		5.22			7.47	7.43
	41	112.00	86.43	0.56	0.56	1.32	1.32			3.07	3.07		4.66			6.57	6.54
	42	116.00	86.17	0.63	0.63	1.45	1.45			3.30	3.30		4.90			6.86	6.84
	43	120.00	85.68	0.74	0.74	1.67	1.67			3.64	3.64		5.29			7.25	7.22
	44	124.00	85.15	0.87	0.87	1.91	1.91			4.05	4.05		5.75			7.73	7.70
	45	128.00	84.82	0.87	0.87	1.89	1.89			3.93	3.93		5.52			7.34	7.31
	46	132.00	84.53	0.96	0.96	2.06	2.06			4.24	4.24		5.90			7.76	7.73
	47	136.00	84.28	0.90	0.90	1.92	1.92			3.91	3.91		5.40			7.05	7.02
	48	140.00	84.27	0.86	0.86	1.84	1.84			3.74	3.74		5.17			6.74	6.71
	49	144.00	83.58	1.12	1.12	2.37	2.37			4.72	4.72		6.40			8.18	8.15
	50	148.00	83.01	1.11	1.11	2.33	2.33			4.57	4.57		6.12			7.71	7.68
	51	152.00	82.67	0.93	0.93	1.94	1.94			3.76	3.76		5.01			6.26	6.23
	52	156.00	82.23	1.17	1.17	2.44	2.44			4.69	4.69		6.19			7.66	7.63
	53	160.00	82.11	1.06	1.06	2.19	2.19			4.22	4.22		5.56			6.85	6.82
	54	164.00	82.46	1.09	1.09	2.27	2.27			4.39	4.39		5.81			7.23	7.20
	55	168.00	82.49	1.18	1.18	2.47	2.47			4.78	4.78		6.34			7.89	7.85
	56	172.00	82.87	1.14	1.14	2.38	2.38			4.65	4.65		6.21			7.80	7.76
	57	176.00	83.45	0.95	0.95	2.00	2.00			3.95	3.95		5.35			6.81	6.78
	58	180.00	84.01	1.00	1.00	2.13	2.13			4.28	4.28		5.87			7.60	7.57
	59	184.00	84.75	0.91	0.91	1.97	1.97			4.09	4.09		5.72			7.58	7.55
	60	188.00	84.74	0.90	0.90	1.96	1.96			4.07	4.07		5.69			7.54	7.51
	61	192.00	84.43	0.98	0.98	2.11	2.11			4.32	4.32		5.99			7.85	7.82
	62	196.00	84.56	1.00	1.00	2.15	2.15			4.42	4.42		6.15			8.10	8.06
	63	200.00	84.69	1.03	1.03	2.22	2.22			4.60	4.60		6.43			8.50	8.46
	64	204.00	84.97	0.85	0.85	1.86	1.86			3.89	3.89		5.49			7.34	7.30
	65	208.00	85.63	0.54	0.54	1.20	1.20			2.61	2.61		3.78			5.17	5.15
	66	212.00	85.63	0.64	0.64	1.44	1.44			3.14	3.14		4.54			6.22	6.19
	67	216.00	86.70	0.48	0.48	1.15	1.15			2.76	2.76		4.23			6.09	6.06
	68	220.00	86.96	0.29	0.29	0.74	0.74			1.84	1.84		2.87			4.19	4.17
	69	223.20	88.83			0.04	0.04			0.57	0.57		1.14			1.91	1.90
	70	224.00	88.75			0.16	0.16			1.36	1.36		2.65			4.42	4.40
	71	224.70	90.34							0.18	0.18		1.26			2.61	2.60
	72	226.20	90.44							0.07	0.07		0.97			2.05	2.05
*	73	227.70	90.34							0.06	0.08		0.53			0.90	1.10
*	74	229.20	91.29										0.32			0.63	0.84
	75	230.70	92.49										0.10	#		0.56	0.74
	76	232.20	92.14										0.18	#		0.58	0.77
	77	233.30	92.74										0.00	#		0.54	0.72
	78	237.00	93.40											#		0.50	0.66
	79	240.00	93.87											#		0.46	0.61
	80	244.00	94.49											#		0.42	0.55
	81	248.00	95.71											#		0.32	0.42
	82	249.10	96.24											#		0.27	0.36
	83	249.20	96.64											#		0.23	0.31

Total

##### \* ##### \*

Note: an \* means the modeled velocity exceeds the measured velocity by 0.2 ft/sec or 20%

**Table 3.5 - Summary of calibration details for original and revised input decks**

**Calibration details for Spokane River, High Flow**  
Study Site 1, Transect 5

WSE (ft)			88.33		88.99		90.72		93.12			98.90		
Disch (cfs)			428		1,069		3,157		6,622			16,555		
Rv	Pt	Sta	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	Rev	Orig	Rev	
	1	0.00											0.01	0.22
	2	0.10											0.01	0.24
	3	2.00											0.01	0.26
	4	3.00											0.02	0.35
	5	10.00											0.02	0.39
	6	13.00											0.02	0.42
	7	13.20										0.00	0.02	0.48
	8	15.00										0.00	0.03	0.50
	9	16.50										0.01	0.03	0.52
*	10	18.00							0.01	0.01	0.19		0.03	0.54
	11	19.50							0.30	0.29	0.29		0.72	0.72
	12	21.00							1.23	1.18	1.18		2.96	2.95
	13	22.50							1.08	1.03	1.03		2.76	2.75
	14	24.00							2.00	1.91	1.91		5.12	5.09
	15	25.50						0.06	0.06	0.35	0.33	0.33	0.71	0.70
	16	27.00						0.50	0.50	1.60	1.53	1.53	2.99	2.97
	17	32.00						0.79	0.79	1.92	1.83	1.83	3.34	3.32
	18	36.00			0.15	0.15	0.99	0.99	2.02	1.93	1.93		3.28	3.26
	19	40.00			0.34	0.34	1.43	1.43	2.77	2.65	2.65		4.38	4.36
	20	44.00	0.03	0.03	0.37	0.37	1.43	1.43	2.73	2.61	2.61		4.27	4.25
	21	48.00	0.10	0.10	0.44	0.44	1.51	1.51	2.80	2.68	2.68		4.32	4.30
	22	52.00	0.12	0.12	0.53	0.53	1.80	1.80	3.33	3.18	3.18		5.13	5.10
	23	56.00	0.11	0.11	0.49	0.49	1.66	1.66	3.08	2.94	2.94		4.74	4.72
	24	60.00	0.17	0.17	0.61	0.61	1.92	1.92	3.50	3.34	3.34		5.33	5.31
	25	64.00	0.18	0.18	0.61	0.61	1.89	1.89	3.41	3.26	3.26		5.17	5.15
	26	68.00	0.26	0.26	0.75	0.75	2.12	2.12	3.70	3.54	3.54		5.50	5.47
	27	72.00	0.23	0.23	0.72	0.72	2.09	2.09	3.70	3.54	3.54		5.55	5.52
	28	76.00	0.33	0.33	0.89	0.89	2.41	2.41	4.14	3.96	3.96		6.08	6.05
	29	80.00	0.35	0.35	0.89	0.89	2.25	2.25	3.77	3.60	3.60		5.43	5.40
	30	84.00	0.42	0.42	1.06	1.06	2.66	2.66	4.44	4.24	4.24		6.38	6.34
	31	88.00	0.46	0.46	1.09	1.09	2.60	2.60	4.22	4.03	4.03		5.93	5.90
	32	92.00	0.55	0.55	1.27	1.27	2.90	2.90	4.61	4.41	4.40		6.37	6.33
	33	96.00	0.51	0.51	1.17	1.17	2.65	2.65	4.21	4.02	4.02		5.80	5.77
	34	100.00	0.54	0.54	1.22	1.22	2.70	2.70	4.22	4.03	4.03		5.74	5.71
	35	104.00	0.70	0.70	1.56	1.56	3.40	3.40	5.27	5.04	5.04		7.10	7.06
	36	108.00	0.69	0.69	1.53	1.53	3.32	3.32	5.11	4.88	4.88		6.85	6.81
	37	112.00	0.65	0.65	1.42	1.42	3.03	3.03	4.63	4.42	4.42		6.16	6.12
	38	116.00	0.80	0.80	1.73	1.73	3.59	3.59	5.37	5.13	5.13		6.99	6.95
	39	120.00	0.70	0.70	1.50	1.50	3.11	3.11	4.65	4.44	4.44		6.05	6.02
	40	124.00	0.86	0.86	1.82	1.82	3.71	3.71	5.48	5.24	5.24		7.03	6.99
	41	128.00	0.76	0.76	1.61	1.61	3.29	3.29	4.86	4.64	4.64		6.24	6.21
	42	132.00	0.82	0.82	1.74	1.74	3.54	3.54	5.22	4.99	4.99		6.69	6.66
	43	136.00	0.99	0.99	2.09	2.09	4.21	4.21	6.15	5.88	5.88		7.80	7.76
	44	140.00	0.74	0.74	1.54	1.54	3.06	3.06	4.41	4.21	4.21		5.52	5.49
	45	144.00	0.96	0.96	1.99	1.99	3.90	3.90	5.58	5.33	5.33		6.90	6.86
	46	148.00	1.01	1.01	2.09	2.09	4.05	4.05	5.74	5.49	5.48		7.02	6.98
	47	152.00	0.75	0.75	1.55	1.55	3.00	3.00	4.24	4.05	4.05		5.17	5.15
	48	156.00	0.89	0.89	1.84	1.84	3.55	3.55	5.01	4.79	4.79		6.10	6.06
	49	160.00	0.84	0.84	1.74	1.74	3.37	3.37	4.78	4.57	4.57		5.85	5.82
	50	164.00	0.84	0.84	1.75	1.75	3.42	3.42	4.87	4.65	4.65		5.99	5.96
	51	168.00	0.88	0.88	1.84	1.84	3.60	3.60	5.14	4.91	4.91		6.35	6.32
	52	172.00	0.93	0.93	1.97	1.97	3.95	3.95	5.75	5.49	5.49		7.27	7.23
	53	176.00	0.95	0.95	2.00	2.00	4.00	4.00	5.82	5.56	5.56		7.35	7.32
	54	180.00	0.90	0.90	1.91	1.91	3.82	3.82	5.56	5.31	5.31		7.02	6.99
	55	184.00	0.89	0.89	1.86	1.86	3.66	3.66	5.26	5.03	5.03		6.54	6.50
	56	188.00	0.81	0.81	1.72	1.72	3.49	3.49	5.13	4.90	4.90		6.56	6.53
	57	192.00	0.83	0.83	1.80	1.80	3.77	3.77	5.69	5.44	5.44		7.47	7.43
	58	196.00	0.74	0.74	1.64	1.64	3.58	3.58	5.53	5.28	5.28		7.44	7.40
	59	200.00	0.74	0.74	1.67	1.67	3.73	3.73	5.85	5.59	5.59		7.98	7.94
	60	204.00	0.52	0.52	1.29	1.29	3.21	3.21	5.35	5.11	5.11		7.66	7.63
	61	208.00	0.25	0.25	0.81	0.81	2.43	2.43	4.35	4.16	4.16		6.56	6.53
	62	212.00			0.39	0.39	2.46	2.46	5.02	4.80	4.80		8.14	8.09
	63	220.00					1.80	1.80	4.36	4.17	4.17		7.57	7.53
	64	222.20							2.00	1.91	1.91		5.96	5.93
	65	223.70							2.61	2.49	2.49		7.78	7.74
	66	224.00					1.49	1.49	3.57	3.41	3.41		6.18	6.15
	67	225.20					0.04	0.04	1.27	1.21	1.21		2.66	2.65
	68	226.70							1.18	1.13	1.13		2.52	2.51
	69	228.20							1.15	1.10	1.10		2.57	2.55
	70	229.70							1.19	1.14	1.14		3.40	3.38
*	71	231.20							0.05	0.05	0.18		0.22	0.84
	72	232.69								0.03	0.12		0.21	0.81
	73	234.59								0.02	0.09		0.21	0.80
	74	238.00											0.21	0.78
	75	243.00											0.17	0.63
	76	247.00											0.15	0.56
	77	250.60											0.12	0.44
	78	250.69											0.08	0.32

Total

##### \* ##### \*

Note: an \* means the modeled velocity exceeds the measured velocity by 0.2 ft/sec or 20%

Table 3.6 - Summary of calibration details for original and revised input decks													
Calibration details for Spokane River, High Flow													
Study Site 2, Transect 1													
Rv	WSE (ft)		92.72		93.34		94.54		95.91		98.10		
	Pt	Disch (cfs)	Sta	Elev	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	Rev
1	0.00	102.20											
2	0.10	101.03											
3	2.00	100.35											
4	10.00	98.83											
5	16.00	97.47											
6	20.00	96.70											
7	24.00	96.36											
8	28.00	95.93											
9	29.30	96.08											
* 10	31.00	95.18								0.14	0.15	0.31	0.31
11	32.50	94.73								1.01	1.05	1.05	1.05
12	34.00	94.48						0.04	0.04	0.43	0.45	0.45	0.45
13	35.50	94.38						0.08	0.08	0.44	0.46	0.46	0.46
14	37.00	94.18						0.46	0.46	1.67	1.73	1.74	1.74
15	38.50	93.88						0.71	0.71	1.92	1.99	2.00	2.00
16	40.00	93.88						0.95	0.96	2.57	2.66	2.67	2.67
17	41.50	93.88						1.14	1.15	3.08	3.19	3.20	3.20
18	43.00	93.88						1.41	1.42	3.81	3.95	3.96	3.96
19	44.50	93.68						1.61	1.62	3.88	4.02	4.04	4.04
20	47.00	93.28					0.15	0.15	1.76	1.77	3.66	3.79	3.81
21	48.00	93.18					0.23	0.23	1.53	1.53	3.10	3.21	3.22
22	52.00	91.47	0.28	0.28	0.58	0.58	1.26	1.26	2.05	2.12	2.13	2.13	2.13
23	56.00	90.49	0.44	0.44	0.82	0.82	1.62	1.62	2.50	2.59	2.60	2.60	2.60
24	60.00	90.01	0.36	0.36	0.66	0.66	1.26	1.26	1.91	1.98	1.99	1.99	1.99
25	64.00	89.87	0.65	0.65	1.17	1.17	2.23	2.23	3.36	3.48	3.50	3.50	3.50
26	68.00	90.08	0.64	0.65	1.18	1.18	2.27	2.28	3.45	3.57	3.59	3.59	3.59
27	72.00	89.46	0.64	0.64	1.15	1.15	2.15	2.15	3.20	3.32	3.33	3.33	3.33
28	76.00	89.41	0.53	0.53	0.95	0.95	1.77	1.77	2.63	2.72	2.74	2.74	2.74
29	80.00	89.79	0.54	0.54	0.98	0.98	1.85	1.85	2.78	2.88	2.89	2.89	2.89
30	84.00	89.98	0.68	0.68	1.23	1.24	2.36	2.36	3.57	3.70	3.71	3.71	3.71
31	88.00	90.13	0.63	0.64	1.17	1.17	2.25	2.25	3.42	3.54	3.56	3.56	3.56
32	92.00	89.69	0.56	0.56	1.01	1.01	1.90	1.91	2.85	2.95	2.97	2.97	2.97
33	96.00	89.18	0.74	0.74	1.32	1.32	2.43	2.44	3.60	3.73	3.75	3.75	3.75
34	100.00	89.46	0.65	0.65	1.16	1.17	2.17	2.18	3.24	3.36	3.37	3.37	3.37
35	104.00	89.57	0.76	0.76	1.36	1.36	2.55	2.56	3.81	3.95	3.96	3.96	3.96
36	108.00	89.85	0.60	0.60	1.08	1.08	2.05	2.06	3.09	3.20	3.21	3.21	3.21
37	112.00	89.82	0.74	0.74	1.33	1.34	2.53	2.54	3.81	3.95	3.96	3.96	3.96
38	116.00	89.37	0.65	0.65	1.16	1.17	2.17	2.17	3.22	3.34	3.35	3.35	3.35
39	120.00	89.51	0.71	0.72	1.28	1.28	2.39	2.40	3.57	3.70	3.71	3.71	3.71
40	124.00	89.45	0.68	0.68	1.21	1.21	2.25	2.26	3.36	3.48	3.50	3.50	3.50
41	128.00	89.07	0.69	0.70	1.23	1.23	2.26	2.26	3.33	3.45	3.46	3.46	3.46
42	132.00	89.07	0.71	0.71	1.25	1.25	2.30	2.31	3.39	3.51	3.53	3.53	3.53
43	136.00	89.13	0.95	0.95	1.68	1.68	3.09	3.10	4.57	4.73	4.75	4.75	4.75
44	140.00	89.07	0.94	0.94	1.66	1.66	3.05	3.06	4.50	4.66	4.68	4.68	4.68
45	144.00	89.67	0.94	0.94	1.69	1.69	3.18	3.19	4.77	4.94	4.96	4.96	4.96
46	148.00	89.80	0.83	0.83	1.51	1.51	2.86	2.86	4.30	4.45	4.47	4.47	4.47
47	152.00	90.26	0.86	0.86	1.59	1.59	3.08	3.09	4.71	4.88	4.90	4.90	4.90
48	156.00	90.20	0.76	0.76	1.40	1.40	2.71	2.72	4.14	4.29	4.31	4.31	4.31
49	160.00	90.01	0.80	0.80	1.47	1.47	2.81	2.82	4.26	4.41	4.43	4.43	4.43
50	164.00	90.25	0.69	0.69	1.27	1.27	2.46	2.47	3.77	3.91	3.92	3.92	3.92
51	168.00	90.36	0.81	0.81	1.50	1.50	2.93	2.94	4.50	4.66	4.68	4.68	4.68
52	172.00	90.60	0.71	0.71	1.35	1.35	2.68	2.69	4.16	4.31	4.33	4.33	4.33
53	176.00	90.44	0.77	0.77	1.44	1.44	2.82	2.83	4.35	4.51	4.53	4.53	4.53
54	180.00	90.71	0.79	0.79	1.50	1.50	3.00	3.01	4.68	4.85	4.87	4.87	4.87
55	184.00	90.79	0.64	0.64	1.22	1.22	2.47	2.47	3.86	4.00	4.02	4.02	4.02
56	188.00	91.04	0.57	0.57	1.11	1.11	2.30	2.30	3.64	3.77	3.79	3.79	3.79
57	192.00	91.11	0.64	0.64	1.26	1.26	2.61	2.62	4.16	4.31	4.33	4.33	4.33
58	196.00	91.60	0.52	0.52	1.10	1.11	2.44	2.45	4.01	4.15	4.17	4.17	4.17
59	200.00	91.38	0.49	0.49	1.00	1.00	2.15	2.16	3.48	3.61	3.62	3.62	3.62
60	204.00	91.59	0.49	0.49	1.05	1.06	2.33	2.34	3.82	3.96	3.97	3.97	3.97
61	208.00	91.83	0.48	0.48	1.09	1.09	2.51	2.52	4.19	4.34	4.36	4.36	4.36
62	212.00	92.08	0.38	0.38	0.94	0.94	2.29	2.30	3.92	4.06	4.08	4.08	4.08
63	216.00	92.46	0.20	0.20	0.72	0.72	2.00	2.00	3.56	3.69	3.70	3.70	3.70
64	220.00	92.70	0.03	0.03	0.52	0.53	1.66	1.66	3.06	3.17	3.18	3.18	3.18
65	224.00	92.73			0.53	0.53	1.71	1.72	3.17	3.28	3.30	3.30	3.30
66	228.00	92.64	0.10	0.10	0.69	0.69	2.11	2.11	3.85	3.99	4.01	4.01	4.01
67	232.00	92.56	0.10	0.10	0.46	0.47	1.35	1.35	2.44	2.53	2.54	2.54	2.54
68	240.00	92.48	0.21	0.21	0.78	0.78	2.18	2.19	3.90	4.04	4.06	4.06	4.06
69	248.00	93.00			0.37	0.37	1.58	1.58	3.07	3.18	3.19	3.19	3.19
70	252.00	92.92			0.39	0.39	1.49	1.50	2.86	2.96	2.98	2.98	2.98
71	256.00	92.52	0.15	0.15	0.64	0.64	1.81	1.82	3.26	3.38	3.39	3.39	3.39
72	260.00	92.84			0.59	0.59	2.10	2.11	3.96	4.10	4.12	4.12	4.12
73	264.00	92.81			0.59	0.59	2.03	2.04	3.81	3.95	3.96	3.96	3.96
74	268.00	92.42	0.32	0.32	1.09	1.09	2.96	2.97	5.25	5.44	5.46	5.46	5.46
75	272.00	91.91	0.49	0.49	1.15	1.15	2.69	2.70	4.53	4.69	4.71	4.71	4.71
76	276.00	92.14	0.43	0.43	1.12	1.12	2.77	2.78	4.77	4.94	4.96	4.96	4.96
77	280.00	92.12	0.44	0.44	1.12	1.13	2.77	2.78	4.75	4.92	4.94	4.94	4.94
78	284.00	91.45	0.62	0.62	1.29	1.29	2.79	2.80	4.53	4.69	4.71	4.71	4.71
79	288.00	91.69	0.46	0.46	1.01	1.01	2.26	2.27	3.74	3.87	3.89	3.89	3.89
80	292.00	91.61	0.57	0.57	1.22	1.22	2.71	2.72	4.45	4.61	4.63	4.63	4.63
81	296.00	91.41	0.74	0.75	1.54	1.54	3.31	3.32	5.36	5.55	5.58	5.58	5.58
82	300.00	91.33	0.63	0.63	1.29	1.29	2.74	2.75	4.42	4.58	4.60	4.60	4.60
83	304.00	91.37	0.74	0.74	1.52	1.53	3.27	3.28	5.28	5.47	5.49	5.49	5.49
84	308.00	91.12	0.79	0.79	1.57	1.57	3.27	3.28	5.20	5.39	5.41	5.41	5.41
85	312.00	91.07	0.78	0.78	1.54	1.55	3.19	3.20	5.07	5.25	5.27	5.27	5.27
86	316.00	91.35	0.74	0.74	1.51	1.52	3.23	3.25	5.22	5.41	5.43	5.43	5.43
87	320.00	91.29	0.65	0.65	1.32	1.32	2.80	2.81	4.51	4.67	4.69	4.69	4.69
88	324.00	90.90	0.66	0.66	1.29	1.29	2.62	2.63	4.12	4.27	4.29	4.29	4.29
89	328.00	91.34	0.74	0.74	1.51	1.51	3.22	3.23	5.19	5.38	5.40	5.40	5.40
90	332.00	91.62	0.61	0.61	1.31	1.31	2.91	2.92	4.79	4.96	4.98	4.98	4.98
91	336.00	91.60	0.70	0.70	1.49	1.49	3.30	3.31	5.42	5.62	5.64	5.64	5.64
92	340.00	91.67	0.63	0.63	1.38	1.38	3.08	3.09	5.08	5.26	5.29	5.29	5.29
93	344.00	91.71	0.66	0.61	1.46	1.34	3.29	3.03	5.44	5.64	5.20	5.20	5.20
94	348.00	92.55	0.23	0.19	1.03	0.85	2.98	2.46	5.38	5.57	4.59	4.59	4.59
95	352.00	92.64	0.12	0.11	0.85	0.78	2.57	2.38	4.70	4.87	4.51	4.51	4.51
96	356.00	93.09			0.47	0.48	2.40	2.41	4.76	4.93	4.95	4.95	4.95
97	362.50	93.28			0.05	0.05	0.56	0.56	1.16	1.20	1.21	1.21	1.21
98	364.00	93.78					0.28	0.29	0.72	0.75	0.75	0.75	0.75
99	365.50	94.48					0.0						

Table 3.7 - Summary of calibration details for original and revised input decks														
Calibration details for Spokane River, High Flow														
Study Site 2, Transect 2														
Rv	Pt	WSE (ft)		92.80		93.49		94.85		96.43		99.00		
		Disch	(cfs)	Sta	Elev	Orig	Rev	Orig	Rev	Orig	Rev	Meas	Orig	Rev
	1	0.00	102.08											
	2	0.10	100.67											
	3	2.00	99.37											
	4	4.00	99.99											
	5	12.00	98.55											
	6	14.00	97.95										0.13	0.25
	7	16.00	97.46										0.24	0.45
	8	20.00	96.68										0.30	0.58
	9	22.70	96.44										0.40	0.76
	10	24.00	95.94										0.43	0.81
*	11	26.00	95.54								0.10	0.20	0.48	0.92
	12	27.50	95.24							0.15	0.15	0.29	0.52	1.00
	13	29.00	95.14							0.51	0.52	0.52	1.54	1.54
	14	30.50	94.94							1.09	1.10	1.10	3.17	3.17
	15	32.00	94.94							0.87	0.88	0.88	2.37	2.37
	16	33.50	94.64							0.78	0.79	0.79	2.13	2.13
	17	35.00	94.54					0.16	0.16	0.93	0.94	0.94	2.35	2.35
	18	36.50	94.54					0.35	0.35	1.65	1.66	1.66	4.08	4.07
	19	38.00	94.24					0.36	0.36	1.69	1.70	1.70	4.18	4.17
	20	39.50	94.04					0.39	0.39	1.29	1.30	1.30	3.01	3.01
	21	44.00	93.30					0.37	0.37	1.09	1.10	1.10	2.47	2.46
	22	48.00	93.53			0.09	0.09	0.68	0.68	1.54	1.55	1.55	3.19	3.18
	23	52.00	93.26			0.20	0.20	1.18	1.18	2.81	2.82	2.82	5.95	5.95
	24	56.00	91.92	0.28	0.28	0.73	0.73	1.31	1.31	2.94	2.95	2.95	6.06	6.05
	25	60.00	91.96	0.34	0.34	0.89	0.89	1.98	1.98	3.74	3.75	3.75	6.99	6.98
	26	64.00	91.54	0.32	0.32	0.77	0.77	2.42	2.42	4.59	4.60	4.60	8.60	8.58
	27	68.00	90.85	0.33	0.33	0.72	0.72	1.95	1.95	3.58	3.59	3.59	6.56	6.55
	28	72.00	90.93	0.42	0.42	0.92	0.92	1.69	1.69	2.99	2.99	2.99	5.32	5.31
	29	76.00	90.49	0.41	0.41	0.86	0.86	2.17	2.17	3.85	3.86	3.86	6.87	6.86
	30	80.00	90.56	0.45	0.45	0.96	0.96	1.97	1.97	3.43	3.43	3.43	6.02	6.01
	31	84.00	90.10	0.57	0.57	1.17	1.17	2.21	2.21	3.85	3.86	3.86	6.78	6.77
	32	88.00	89.97	0.52	0.52	1.07	1.07	2.60	2.60	4.46	4.47	4.47	7.73	7.72
	33	92.00	89.61	0.65	0.65	1.30	1.30	2.36	2.36	4.03	4.03	4.03	6.96	6.95
	34	96.00	89.54	0.59	0.59	1.18	1.18	2.84	2.84	4.79	4.79	4.79	8.19	8.17
	35	100.00	89.37	0.61	0.61	1.21	1.21	2.56	2.56	4.32	4.32	4.32	7.37	7.36
	36	104.00	89.42	0.63	0.63	1.26	1.26	2.61	2.61	4.38	4.38	4.38	7.44	7.43
	37	108.00	89.01	0.60	0.60	1.19	1.19	2.72	2.72	4.57	4.57	4.57	7.77	7.76
	38	112.00	89.64	0.69	0.69	1.40	1.40	2.53	2.53	4.20	4.20	4.20	7.07	7.06
	39	116.00	89.91	0.71	0.71	1.45	1.45	3.05	3.05	5.15	5.16	5.16	8.81	8.80
	40	120.00	89.67	0.73	0.73	1.47	1.47	3.20	3.20	5.45	5.46	5.46	9.39	9.38
	41	124.00	88.88	0.71	0.71	1.41	1.41	3.21	3.21	5.43	5.44	5.44	9.29	9.28
	42	128.00	89.12	0.70	0.70	1.39	1.39	2.98	2.98	4.93	4.93	4.93	8.27	8.26
	43	132.00	89.10	0.70	0.70	1.39	1.39	2.95	2.95	4.92	4.92	4.92	8.30	8.29
	44	136.00	88.91	0.70	0.70	1.37	1.37	2.96	2.96	4.93	4.93	4.93	8.32	8.30
	45	140.00	89.04	0.67	0.67	1.32	1.32	2.91	2.91	4.82	4.82	4.82	8.09	8.08
	46	144.00	89.12	0.62	0.62	1.23	1.23	2.80	2.80	4.66	4.66	4.66	7.85	7.84
	47	148.00	88.92	0.67	0.67	1.33	1.33	2.62	2.62	4.36	4.36	4.36	7.36	7.35
	48	152.00	88.95	0.77	0.77	1.52	1.52	2.81	2.81	4.66	4.66	4.66	7.83	7.82
	49	156.00	89.17	0.63	0.63	1.25	1.25	3.22	3.22	5.34	5.34	5.34	8.97	8.96
	50	160.00	88.98	0.66	0.66	1.31	1.31	2.67	2.67	4.45	4.45	4.45	7.52	7.51
	51	164.00	88.79	0.63	0.63	1.25	1.25	2.79	2.79	4.63	4.63	4.63	7.79	7.78
	52	168.00	88.73	0.61	0.61	1.19	1.19	2.63	2.63	4.34	4.34	4.34	7.27	7.26
	53	172.00	88.64	0.65	0.65	1.28	1.28	2.51	2.51	4.14	4.14	4.14	6.92	6.91
	54	176.00	88.60	0.66	0.66	1.29	1.29	2.68	2.68	4.41	4.41	4.41	7.36	7.35
	55	180.00	88.68	0.58	0.58	1.15	1.15	2.70	2.70	4.45	4.45	4.45	7.42	7.41
	56	184.00	88.96	0.62	0.62	1.23	1.23	2.41	2.41	3.97	3.97	3.97	6.63	6.62
	57	188.00	88.97	0.64	0.64	1.27	1.27	2.61	2.61	4.33	4.33	4.33	7.28	7.27
	58	192.00	89.03	0.54	0.54	1.08	1.08	2.70	2.70	4.48	4.48	4.48	7.53	7.52
	59	196.00	89.25	0.50	0.50	1.00	1.00	2.29	2.29	3.80	3.80	3.80	6.40	6.39
	60	200.00	89.41	0.56	0.56	1.12	1.12	2.15	2.15	3.59	3.59	3.59	6.08	6.07
	61	204.00	89.66	0.59	0.59	1.20	1.20	2.42	2.42	4.06	4.06	4.06	6.90	6.89
	62	208.00	89.96	0.54	0.54	1.11	1.11	2.61	2.61	4.41	4.41	4.41	7.55	7.54
	63	212.00	90.06	0.56	0.56	1.16	1.16	2.45	2.45	4.19	4.19	4.19	7.23	7.22
	64	216.00	90.30	0.54	0.54	1.13	1.13	2.57	2.57	4.40	4.41	4.41	7.62	7.61
	65	220.00	90.33	0.44	0.44	0.92	0.92	2.56	2.56	4.42	4.43	4.43	7.71	7.70
	66	224.00	90.61	0.43	0.43	0.91	0.91	2.09	2.09	3.61	3.61	3.61	6.30	6.30
	67	228.00	90.73	0.47	0.47	1.01	1.01	2.09	2.09	3.65	3.66	3.66	6.44	6.43
	68	232.00	90.84	0.49	0.49	1.07	1.07	2.35	2.35	4.14	4.15	4.15	7.33	7.32
	69	236.00	91.08	0.41	0.41	0.91	0.91	2.50	2.50	4.42	4.43	4.43	7.86	7.85
	70	240.00	91.22	0.37	0.37	0.82	0.82	2.19	2.19	3.91	3.92	3.92	7.02	7.01
	71	244.00	91.58	0.33	0.33	0.78	0.78	2.00	2.00	3.61	3.62	3.62	6.52	6.51
	72	248.00	91.43	0.29	0.29	0.69	0.69	1.98	1.98	3.65	3.66	3.66	6.70	6.69
	73	252.00	91.68	0.31	0.31	0.77	0.77	1.71	1.71	3.12	3.13	3.13	5.69	5.68
	74	256.00	91.97	0.26	0.26	0.69	0.69	1.99	1.99	3.68	3.69	3.69	6.79	6.78
	75	260.00	92.13	0.23	0.23	0.64	0.64	1.88	1.88	3.57	3.58	3.58	6.69	6.68
	76	264.00	92.35	0.17	0.17	0.57	0.57	1.81	1.81	3.48	3.49	3.49	6.58	6.57
	77	268.00	92.55	0.11	0.11	0.48	0.48	1.71	1.71	3.35	3.36	3.36	6.42	6.41
	78	272.00	92.63	0.08	0.08	0.42	0.42	1.56	1.56	3.12	3.13	3.13	6.06	6.05
	79	276.00	92.89			0.35	0.35	1.40	1.40	2.84	2.85	2.85	5.55	5.54
	80	280.00	93.26			0.23	0.23	1.37	1.37	2.87	2.88	2.88	5.72	5.71
	81	284.00	93.24			0.20	0.20	1.49	1.49	3.34	3.35	3.35	6.88	6.87
	82	288.00	93.44			0.07	0.07	1.21	1.21	2.71	2.72	2.72	5.57	5.56
	83	288.70	93.42			0.07	0.07	1.23	1.23	2.87	2.88	2.88	6.02	6.01
	84	290.20	93.77					0.91	0.91	2.11	2.12	2.12	4.42	4.41
	85	291.70	93.87					0.81	0.81	2.08	2.09	2.09	4.53	4.53
	86	292.00	93.57					0.70	0.70	1.88	1.89	1.89	4.15	4.15
	87	293.00	95.13					0.47	0.47	1.13	1.14	1.14	2.40	2.40
	88	294.50	95.04							0.75	0.76	0.76	2.18	2.17
	89	296.00	94.94							0.85	0.86	0.86	2.39	2.39
	90	297.50	94.88							0.88	0.89	0.89	2.40	2.40
	91	299.00	95.49							0.61	0.62	0.62	1.64	1.63
	92	300.50	95.63							0.54	0.55	0.55	1.83	1.83
	93	302.00	95.63							0.60	0.61	0.61	2.22	2.22
	94	302.20	95.64							0.13	0.13	0.27	0.48	0.98
	95	304.20	95.84							0.13	0.13	0.23	0.48	0.85
	96	305.20	96.34								0.11	0.19	0.46	0.82
	97	306.50	96.44								0.03	0.05	0.41	0.73
	98	308.00	96.65										0.40	0.71
	99	310.00	98.05											

<b>Table 4. Summary of Calibration Details, Spokane River</b>							
Trans No.	<b>SS1T1</b>	<b>SS1T2</b>	<b>SS1T3</b>	<b>SS1T4</b>	<b>SS1T5</b>	<b>SS2T1</b>	<b>SS2T2</b>
<b>DISCHARGE</b>							
Meas.	870	870	1,069	1,069	1,069	867	867
	3,157	3,157	3,157	3,157	3,157	2,681	2,681
	6,907	6,420	6,328	6,685	6,769	6,225	6226
Calc.	870	870	1,069	1,069	1,069	867	867
	3,157	3,157	3,157	3,157	3,157	2,681	2,681
	6,908	6,396	6,327	6,664	6,664	6,008	6,187
Given	870	870	1,069	1,069	1,069	867	867
	3,157	3,157	3,157	3,157	3,157	2,681	2,681
	6,622	6,622	6,622	6,622	6,622	6,225	6,225
<b>Stage (given)</b>							
	89.92	90.23	88.32	88.90	88.9	93.34	93.48
	92.11	92.47	89.81	90.50	90.72	94.54	94.88
	95.00	95.27	91.95	92.74	93.12	95.91	96.4
<b>Plotting Stage (given)</b>							
	1.10	1.26	1.02	1.15	1.68	1.89	2.58
	3.29	3.50	2.51	2.75	3.50	3.09	3.98
	6.18	6.30	4.65	4.99	5.90	4.46	5.50
<b>Ratio of Modeled vs Predicted Discharge (given)</b>							
<b>Based on Stage-Discharge Relationship</b>							
	0.9999	0.9999	0.9999	1.0001	1.0001	1.0000	1.0000
	1.0004	1.0003	1.0003	0.9997	0.9998	1.0001	1.0001
	0.9998	0.9998	0.9998	1.0002	1.0001	0.9999	0.9999
<b>Mean Error of Stage/Discharge Relationship (Given)</b>							
	0.0245	0.0209	0.0187	0.0182	0.0146	0.0072	0.0071
<b>Stage/Discharge Relationship (S vs Q) <math>S=A*Q^{**}B+SZF</math></b>							
A=	0.0035	0.0059	0.0031	0.0042	0.00	0.10	0.19
B=	0.8504	0.7929	0.8319	0.8048	0.79411	0.436	0.38404
SZF=	88.82	88.97	87.30	87.75	87.22	91.451	90.9
<b>B Coefficient log/log Relationship (calculated)</b>							
	1.1760	1.26	1.2021	1.2425	1.2593	2.2956	2.6039