



Cross Section Survey Data Sheet

Date / Time: 8/23/14 0900  
 River: Tsubena CK.  
 Cross Section: XS1-2  
 Length: See GPS to calculate

Crew: MDH, RET, RAV  
 Northing / Lat: 3227277.40 (XSIR)  
 Easting / Long: 1872584.90 (XSIR)  
 Est. Q (cfs): 600-700  
 Comments: Bank & CAP AT XS1 R&L, XS5 R&L  
 NO MARKER AT OTHER XSECS → ONLY GPS POINT

CLOSED ✓ (ON RZ GAGE + XSIR)

Point	BS (+)	HI	FS (-)	Elev	Notes
XS1L	3.85			100.00	ASSUMED
INST 1		103.85			
TP 1	4.03		4.03	99.82	
XS2L @ INST 2	7.22	<del>107.04</del>		99.99	INST 2 ✓ OK
TP 1	7.39	107.21			ON INST 2
TP 1	7.39	107.21			ON INST 3
RZ GAGE			8.05	99.16	@ 2.0' mark on gage

XS1

Station	Rod	Depth	Elevation	Description	Notes
0	3.85			XS1L ALL CAP TOP CAP	→ ASSUMED 100.00' ELEV
	4.52			XS1L GROUND @ CAP	→ ALDERS / WILLOWS
5	5.45			POINT ON BANK - Boulders	
8	6.75		97.1	LEW / TOE BANK	
12	7.79	1.0		Boulders / COB / GRAV	
17	8.35	1.6		"	
25	9.64	3.0		"	
31	9.83	3.1		D/S 5' Boulder	
36	10.12	3.7			
42	9.19	2.7			
49	8.85	2.3			
58	8.70	2.1		COBBLES	
66	8.51	2.1		"	
75	7.60	1.0			
82	7.35	0.9		COB / GRAV	
88	8.10	1.6			
96	8.65	2.1		Boul / COB / GRAV	
105	9.05	2.6		"	
111	8.21	1.6		"	
118	7.65	1.1		"	
123	6.58			REW / TOE BANK	
126	3.64				
133	1.00			GROUND @ B&L	
	0.38		103.47	TOP CAP - TSU-IR	
0	4.34			PT ON BANK	XS2L GPS PT
4	6.25			LEW / BOUL / COB / GRAV	@ STA 1
7	6.89	0.6		BAND / GRAV / COB	
12	7.70	1.4		"	
18	7.39	1.1		"	
27	8.02	1.9		"	

XS2

CAP @ XS1L  
 #15 STAMPED  
 AS TSU-5R

XS2L GPS PT  
 @ STA 1  
 MOSS ON COBBLES / SAND  
 ALDERS



Date / Time: 8/23/14  
 River: TSVS LNA  
 Cross Section: XS 2

XS2  
CONT.

Station	Rod	Depth	Elevation	Description	Notes
35	8.55	2.4		"	
42	8.54	2.4		"	
51	8.10	2.0		"	
59	7.75	1.6		"	
70	7.91	1.8		"	
80	7.91	1.8		"	
90	7.80	1.7		"	
100	8.05	1.8		"	
106	7.20	1.0			
109	6.25			REW / TOE BANK	- MOSSES, Boulders PT BANK - WILLOWS ALBERS
110	4.53				
<del>120</del> 117	1.43				
120	0.50			TOP BANK	
TP 1	4.03				
XS 1 L	7.22			TOP PIN @ INST 2	
TP 1	7.39			@ INST 2	
<del>RESET INST</del>				<del>NOW INST 3</del>	<del>AFTER</del>
<del>TP 1</del>	<del>7.39</del>				

Photo Log

Photo # Description

1550	2 d/s below XS-1
1551	4 v/s below XS-1 through surveyed reach
1552	4 across channel TRB → TRB XS-1
<del>1554</del>	<del>4 " " " " XS-2</del>
1555	4 d/s @ XS-2
1555	4 v/s @ XS-2
1556	TP LOCATION

Comments: XS 1 and XS 2 on INST 1  
 XS 3 ON INST 2  
 RESET INST. (SLIPPED) TO INST 3  
 INST 3 = INST 2  
 XS 4 ON INST 3  
 XS 5 ON INST 4





Cross Section Survey Data Sheet

Date / Time: 8/23/14  
 River: TSUSENA  
 Cross Section: XS 3-4  
 Length: See GPS pts to calculate

Crew: MDH, RGT, RAV  
 Northing / Lat: 327277.40 (XSIR)  
 Easting / Long: 1872584.90 (XSR)  
 Est. Q (cfs): 600-700 cfs  
 Comments:

Point	BS (+)	HI	FS (-)	Elev	Notes
INST 3		107.21			
TP2			6.89	100.32	
INST 4	5.59			105.91	BS to TP2
R2 GAGE			6.75	99.16	✓ OK

XS3L

Station	Rod	Depth	Elevation	Description	Notes
1	5.62			PT ON BANK	
5	5.80			MOSSES OVER BOULDERS / ALDER	
9	9.24			LEW	
13	10.20	1.0		BOUL/COR/GRAV	
20	11.18	2.0		"	
25	11.00	2.0		"	
33	11.62	1.6		"	
41	11.36	2.4		"	
52	11.40	2.1		"	
55	11.55	2.4		"	
71	11.95	2.9		"	
78	11.15	2.0		"	
87	11.10	2.0		"	
94	11.42	2.3		SAND DEPOS OVER BOUL/COR/GRAV	
99	10.42	1.1		SAND/GRAVEL	
103	9.30			REW	
110	3.14			PT ON BANK	
112	1.61			PT ON BANK	

XS4

RESET	INST →	NOW	INST 3		
TP ↓	7.39				
INST 3			107.21		
1	5.28			XS4L PT ON BANK - ALDERS, MOSSES	
6	6.64			PT ON BANK - BOUNDERS	
10	8.86			LEW	
13	10.28	1.5		BOUL/GRAV/COR	
22	11.10	2.3		"	
30	11.35	2.7		"	
38	10.92	2.3		"	
53	10.40	1.8		"	



Date / Time: 8/23/14  
 River: TSUSENA  
 Cross Section: XS4

XS4  
CONT

Station	Rod	Depth	Elevation	Description	Notes
64	10.66	2.0		"	
70	11.38	2.7		"	
77	11.10	2.4		"	
84	11.00	2.1			
89	10.61	1.7		SAND DEP. BETWEEN ROD & SPOOLS	
95	8.83	REW		#PT IS 6' DIS FROM PT ON BANK - START PT ON BANK	WT RZ GAGE GAGE = 1.20' @ 1120 ↓ @ STA 91
97	7.45				
100	1.84				
BM3	2.80				
RZ GAGE	8.05		99.16	BOTTOM ROD @ 2.0' ON GAGE	
TP2	6.89		100.32	FS	
MOVED	INST → NOW @		INST 4		→ WILLOWS SHOWS
TP2	5.59			BS	
RZ GAGE	6.75		99.16	BTM ROD @ 2.0' ON GAGE	VOK
INST 4	<del>105.59</del> = 105.91				

Photo Log

Photo #	Description
1557	✗ across XS3 TRB → TLB
1558	✗ w/s @ XS3
1559	✗ d/s @ XS3
1560	✗ across channel TRB → TLB @ XS4
1561	✗ w/s @ XS4 w/ RZ gage
1562	✗ d/s @ XS4
1563	✗ across chan TRB → TLB @ XS5
1564	✗ w/s @ XS5 to INST 4
1565	✗ d/s @ XS5

Comments: See RAV phone photos for pictures of stream w/s of surveyed reach and failing bedrock → source of local sed. supply





Cross Section Survey Data Sheet

Date / Time: 8/23/14  
 River: TSUSENA  
 Cross Section: XS5  
 Length: See GPS pts to calculate

Crew: MDH, RET, RAV  
 Northing / Lat: 3 227429.4 (XS5R)  
 Easting / Long: 18 72938.77 (XS5R)  
 Est. Q (cfs): 600-700  
 Comments:

Point	BS (+)	HI	FS (-)	Elev	Notes
INST 4		←		105.91	
XSSL			1.54	104.37	
XSSR			2.95	102.96	
TP1			6.08	99.83	✓ OK ONLY SHOT - NO TURN
XS1R			2.42	103.49	✓ OK

XS5L

Station	Rod	Depth	Elevation	Description	Notes
1	1.54			TOP CAP - BOULDERED	BANK
6	6.12		99.79	LEW	
10	8.68	2.6		BOUL/COR / GRAV	
16	8.43	2.6		"	
22	7.53	1.4		"	
29	6.68	0.7		"	
37	6.92	1.2		"	
46	7.50	1.7		"	
56	8.08	2.3		"	
63	8.15	2.6		"	
70	8.18	2.4			
77	8.34	2.8			
85	8.02	2.4			
93	7.96	2.3			
97	7.14	1.3		SAND DEP B/W BOUL	
101	5.69			REV - START OF	VEG → WILLOWS
103	3.65			GROUND AT PIN	MOSSY BOULDERS
103	2.95			TOP B.N.C XS5R	

XS6

1	3.12			TLB - PT ON BANK	BOULDERED BANK
5	4.02			PT ON BANK - TOP LOWER	OVERHANGING THICK
5	5.46	LEW		LEW	BANK
8	6.50	1.4		BOUL/COR / GRAV	ALGAE
14	5.61	0.2		"	
21	6.05	0.7		"	
29	5.94	0.7		"	
34	5.09	0		PT ON BOULDER	
41	6.79	1.6		COR/BOUL/GRAV	
50	7.25	2.3		"	
58	8.21	3.3		"	
65	8.34	3.5		"	



Date / Time: 8/23/14  
 River: TSUSCANA  
 Cross Section: XS6

XS6 CONT.

Station	Rod	Depth	Elevation	Description	Notes
<del>7573</del>	7.90	3.0		"	
82	7.22	2.3		"	
89	6.70	1.6		"	
97	6.16	1.0		"	
106	5.19	REW		SAND B/W BOULDERS	→ TOG BANK
109	<del>3.38</del>	3.6B		START VEG	- WILLOWS/ALDERS
112	2.57			PT ON BANK	- WILLOWS
TP	6.08		99.83	FS	✓ OK
XSIR	2.42		103.49	FS-TOP CAP	✓ OK

Photo Log

Photo #	Description
1566	✓ TLB → location of XS5L
1567	✓ u/s C XS-6 along TRB
1568	✓ across chan TRB → TLB
1569	✓ d/s along TRB
1570	bedrock control on TRB u/s of survey reach

Comments: