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Ex. 277-US-449

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Stream: Williamson River
Site: 635 (Sand Creek)

Date: 5/28/1993
Habitat: Run

Flow: Mid

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	2.32	102.32		
HP3			2.73	99.59
HP2			3.82	98.50
HP1			3.70	98.62
TP				
HP1	3.58	102.20		
HP2			3.69	98.51
HP3			2.60	99.60
BM			2.19	100.01

Comment:

Date: 6/25/1993
Habitat: Run

Flow: High

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	2.76	102.76		
HP1			4.15	98.61
HP2			4.27	98.49
HP3			3.18	99.58
TP				
HP3	3.30	102.88		
HP2			4.40	98.48
HP1			4.27	98.61
BM			2.88	100.00

Comment:

Date: 9/15/1993
Habitat: Run

Flow: Low

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	3.02	103.02		
HP1			4.41	98.61
HP2			4.53	98.49
HP3			3.44	99.58
TP				
HP3	3.17	102.75		
HP2			4.27	98.48
HP1			4.15	98.60
BM			2.76	99.99

Comment:

(2) Water Surface Elevation (WSE) Survey

	Sta (ft)		Rod (ft)	FS (ft)	HI (ft)	Ave WSE (ft)	Q (cfs)
	L/R	WSE					
TR1	0	102.20	0.00	7.20	102.20	94.99	44.2
	RWSE		0.00	7.22	7.22	94.98	
TR2	24.8	102.20	0.00	7.12	102.20	95.08	
	RWSE		0.00	7.18	7.18	95.02	
TR3	51.9	102.20	0.00	7.03	102.20	95.17	
	RWSE		0.00	7.04	7.04	95.16	
Ave Q=							44.2

Note: WSE slope= 0.34%

(2) Water Surface Elevation (WSE) Survey

	Sta (ft)		Rod (ft)	FS (ft)	HI (ft)	Ave WSE (ft)	Q (cfs)
	L/R	WSE					
TR1	0	102.88	0.00	7.79	102.88	95.09	45.3
	RWSE		0.00	7.80	7.80	95.08	
TR2	24.8	102.88	0.00	7.71	102.88	95.17	53.7
	RWSE		0.00	7.76	7.76	95.12	
TR3	51.9	102.95	0.00	7.63	102.95	95.32	55.2
	RWSE		0.00	7.63	7.63	95.32	
Ave Q=							51.4

Note: WSE slope= 0.45%

(2) Water Surface Elevation (WSE) Survey

	Sta (ft)		Rod (ft)	FS (ft)	HI (ft)	Ave WSE (ft)	Q (cfs)
	L/R	WSE					
TR1	0	102.75	0.00	8.46	102.75	94.29	22.1
	RWSE		0.00	8.46	8.46	94.29	
TR2	24.8	102.75	0.00	8.27	102.75	94.48	23.3
	RWSE		0.00	8.30	8.30	94.45	
TR3	51.9	102.75	0.00	8.19	102.75	94.56	23.3
	RWSE		0.00	8.17	8.17	94.58	
Ave Q=							22.9

Note: WSE slope= 0.54%


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RUN                HIGH                TRANSECT 1
IOC                1101100100001000101000
QARD 7.0
QARD 9.0
QARD 11.0
QARD 13.0
QARD 15.0
QARD 17.0
QARD 19.0
QARD 21.0
QARD 22.9
QARD 25.0
QARD 27.0
QARD 29.0
QARD 31.0
QARD 33.0
QARD 35.0
QARD 37.0
QARD 39.0
QARD 41.0
QARD 44.2
QARD 47.0
QARD 50.0
QARD 51.4
QARD 54.0
QARD 57.0
QARD 60.0
QARD 63.0
QARD 66.0
QARD 69.0
QARD 72.0
QARD 75.0
XSEC1000.0        0.00 1.0        92.69  0.00450
1000.0 -1.3 97.2 -0.4 96.9  1.6 96.0  1.9 93.9  2.5 94.0  3.0 94.0
1000.0  4.0 93.9  5.0 93.1  6.0 93.1  7.0 92.9  8.0 92.7  9.0 92.7
1000.0 10.0 92.9 11.0 93.1 12.0 93.4 13.0 93.6 14.0 93.7 15.0 93.8
1000.0 16.0 94.0 17.0 94.0 18.0 94.6 18.4 95.1 18.5 95.1 19.0 95.3
1000.0 20.5 95.7 21.7 95.9
NS 1000.0        1.1        1.1        1.1        2.3        2.1        9.2
NS 1000.0        2.3        2.3        2.3        3.5        3.5        3.5
NS 1000.0        5.3        5.3        3.3        3.3        3.3        1.1
NS 1000.0        2.3        2.3 .12  2.3        1.1        1.1        1.1
NS 1000.0        1.1        1.1
WSL 1000.0       93.74       93.85       93.94       94.02       94.09       94.15
WSL 1000.0       94.20       94.25       94.30       94.36       94.42       94.49
WSL 1000.0       94.55       94.61       94.67       94.73       94.79       94.85
WSL 1000.0       94.96       95.01       95.06       95.09       95.13       95.18
WSL 1000.0       95.23       95.27       95.32       95.36       95.40       95.44
CAL11000.0       95.09       51.4
VEL11000.0                0.40  1.01  1.02  1.94  1.47  0.88  0.62  1.12  1.97
VEL11000.0  2.76  2.71  2.55  2.58  2.32  2.06  1.27  0.77  0.01  0.00
VEL11000.0
CAL21000.0       94.97       44.2
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0       94.29       22.9
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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RUN                                HIGH                                TRANSECT 2
IOC      1101100100001000101000
QARD    7.0
QARD    9.0
QARD   11.0
QARD   13.0
QARD   15.0
QARD   17.0
QARD   19.0
QARD   21.0
QARD   22.9
QARD   25.0
QARD   27.0
QARD   29.0
QARD   31.0
QARD   33.0
QARD   35.0
QARD   37.0
QARD   39.0
QARD   41.0
QARD   44.2
QARD   47.0
QARD   50.0
QARD   51.4
QARD   54.0
QARD   57.0
QARD   60.0
QARD   63.0
QARD   66.0
QARD   69.0
QARD   72.0
QARD   75.0
XSEC1000.0      0.00 1.0      93.25  0.00450
1000.0 -6.5 97.7 -3.5 97.6  0.0 96.8  1.5 96.3  2.2 95.9  2.4 95.5
1000.0  2.5 95.1  3.0 94.6  3.5 94.5  4.0 94.7  5.0 94.5  6.0 93.3
1000.0  7.0 93.2  8.0 93.3  9.0 93.5 10.0 93.7 11.0 93.7 12.0 93.9
1000.0 13.0 93.9 14.0 93.9 15.0 94.0 16.0 94.0 17.0 94.1 18.0 94.3
1000.0 19.0 94.4 20.0 94.4 21.0 94.3 22.0 94.5 23.0 94.8 24.0 94.9
1000.0 24.2 95.1 24.7 95.6 26.7 96.1 28.6 96.4 31.4 96.5 34.5 97.6
NS 1000.0      1.1      1.1      1.1      1.1      1.1      1.1
NS 1000.0      1.1 0.25  1.1      1.1      1.1      1.1      3.2
NS 1000.0      3.5      5.3      5.3      5.3      5.3      5.3
NS 1000.0      5.3      5.3      3.3      3.3      3.3      3.3
NS 1000.0      3.3      5.3      3.2      3.2      3.2 .1  3.2
NS 1000.0      3.2      1.1      1.1      1.1      1.1      1.1
WSL 1000.0     93.96     94.05     94.13     94.19     94.25     94.30
WSL 1000.0     94.35     94.39     94.44     94.49     94.55     94.60
WSL 1000.0     94.66     94.71     94.76     94.82     94.87     94.93
WSL 1000.0     95.03     95.09     95.15     95.18     95.22     95.27
WSL 1000.0     95.32     95.36     95.40     95.44     95.48     95.52
CAL11000.0     95.15     51.4
VEL11000.0                                0.00 0.05 0.33 0.49 1.63 2.54
VEL11000.0  2.08 2.31 2.94 3.11 3.12 3.02 2.95 2.94 2.87 2.82 2.71 2.30
VEL11000.0  1.90 1.95 1.36 0.84 0.66 0.11 0.00
CAL21000.0     95.03     44.2
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     94.47     22.9
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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RUN                                HIGH                                TRANSECT 3
IOC      1101100100001000101000
QARD    7.0
QARD    9.0
QARD   11.0
QARD   13.0
QARD   15.0
QARD   17.0
QARD   19.0
QARD   21.0
QARD   22.9
QARD   25.0
QARD   27.0
QARD   29.0
QARD   31.0
QARD   33.0
QARD   35.0
QARD   37.0
QARD   39.0
QARD   41.0
QARD   44.2
QARD   47.0
QARD   50.0
QARD   51.4
QARD   54.0
QARD   57.0
QARD   60.0
QARD   63.0
QARD   66.0
QARD   69.0
QARD   72.0
QARD   75.0
XSEC1000.0      0.00 1.0      93.25  0.00450
1000.0 -7.0 98.1  0.0 97.6  1.5 97.3  2.0 96.8  2.2 94.1  2.5 94.0
1000.0  3.0 93.9  4.0 93.4  5.0 92.9  6.0 92.9  7.0 93.2  8.0 93.5
1000.0  9.0 93.4 10.0 93.5 11.0 93.7 12.0 93.9 13.0 94.1 14.0 94.1
1000.0 15.0 93.9 16.0 93.8 17.0 93.8 18.0 93.9 19.0 93.7 20.0 93.7
1000.0 20.7 93.7 20.9 95.7 21.3 96.0 21.7 96.1 23.5 96.3 27.0 96.5
1000.0 29.0 97.5
NS 1000.0      1.1      1.1      1.1      1.1      1.1      1.1
NS 1000.0      3.5      3.5      3.5      3.5      3.5      3.5
NS 1000.0      3.5      3.5      3.5      5.3      5.3      5.3
NS 1000.0      5.3      5.5      5.5      5.5      5.3      5.3
NS 1000.0      5.3      1.1      1.1      1.1      1.1      1.1
NS 1000.0      1.1
WSL 1000.0     94.12     94.21     94.29     94.35     94.41     94.47
WSL 1000.0     94.52     94.57     94.61     94.66     94.71     94.75
WSL 1000.0     94.80     94.85     94.89     94.94     94.99     95.04
WSL 1000.0     95.12     95.18     95.25     95.28     95.32     95.37
WSL 1000.0     95.41     95.46     95.50     95.54     95.57     95.61
CAL11000.0     95.32     51.4
VEL11000.0                                -0.03-0.06-0.07-0.18 1.25 1.89 2.65 2.69
VEL11000.0    3.17 2.31 2.30 2.16 1.11 1.41 1.15 0.76 2.27 2.99 3.14 1.45
VEL11000.0    0.77
CAL21000.0     94.15     44.2
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     94.57     22.9
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ

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