12-8-2009

Ex. 279-US-446

Unknown

Stream: Sycan River
Site: SY-9 (Calihan Cr.)
Date: #######
Habitat: Run **Flow:** Low

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.13	104.13		
HP1			5.88	98.25
HP2			6.26	97.87
HP3			5.25	98.88
TP				
HP3	5.15	104.03		
HP2			6.16	97.87
HP1			5.78	98.25
BM			4.03	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

	L/R WSE	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	4.8	104.03	7.38	0.00	96.65	96.64	0.9
	RWE			7.40	0.00	96.63		
TR2	LWE	9.6	104.03	7.33	0.00	96.70	96.67	1.2
	RWE			7.39	0.00	96.64		
TR3	LWE	19.2	104.76	7.98	0.00	96.78	96.76	1.3
	RWE			8.02	0.00	96.74		
							Ave Q=	1.1

Note:
WSE slope= 0.83%

Date: 5/9/1991
Habitat: Run **Flow:** Mid

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	3.37	103.37		
HP3			4.51	98.86
HP2			5.53	97.84
HP1			5.15	98.22
TP				
HP1	5.14	103.36		
HP2			5.52	97.84
HP3			4.5	98.86
BM			3.36	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

	L/R WSE	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	4.8	103.36	6.40	0.00	96.96	96.96	5.3
	RWE			6.41	0.00	96.95		
TR2	LWE	9.6	103.36	6.35	0.00	97.01	97.00	4.3
	RWE			6.37	0.00	96.99		
TR3	LWE	19.2	103.36	6.27	0.00	97.09	97.06	3.7
	RWE			6.33	0.00	97.03		
							Ave Q=	4.4

Note:
WSE slope= 0.73%

Date: #######
Habitat: Run **Flow:** High

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	4.12	104.12		
HP3			5.27	98.85
HP2			6.28	97.84
HP1			5.90	98.22
TP				
HP1	5.50	103.72		
HP2			5.88	97.84
HP3			4.87	98.85
BM			3.73	99.99

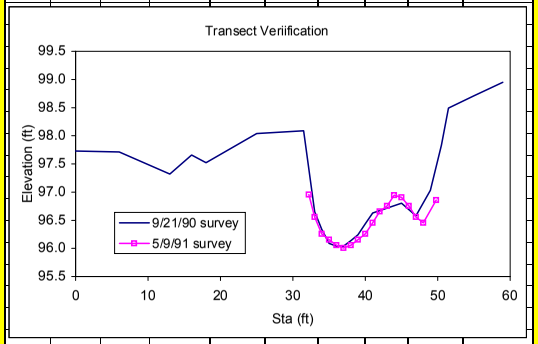
Comment:

(2) Water Surface Elevation (WSE) Survey
HI=

	L/R WSE	Sta (ft)	HI (ft)	FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)
TR1	LWE	4.8	103.72	6.19	0.00	97.53	97.50	12.7
	RWE			6.25	0.00	97.47		
TR2	LWE	9.6	103.72	6.19	0.00	97.53	97.51	
	RWE			6.24	0.00	97.48		
TR3	LWE	19.2	103.72	6.13	0.00	97.59	97.59	
	RWE			6.13	0.00	97.59		
							Ave Q=	12.7

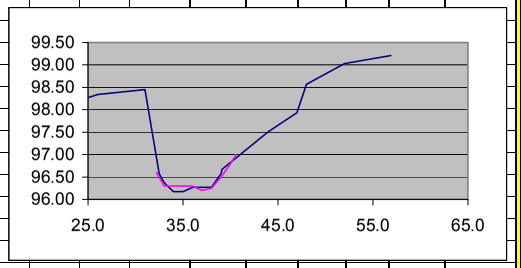
Note:
WSE slope= 0.63%

Stream:	Sycan River																												
Site:	SY-9			21-Sep-90									9-May-91										25-May-93							
Transect:	1			Sta	FS	Ground	Depth	Vel (ft/s)			q		Sta	FS	Ground	Depth	Vel (ft/s)			q			Sta	FS	Ground	Depth	Vel (ft/s)			q	
Habitat:	Run			(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate	(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate		(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate
			LWP	0.0	6.30	97.73						1.1	LWE	32.2		96.96	0.00	0.00		0.00	0.00	2.2	LWE	1.6		97.50	0.00	0.00		0.00	0.00	
Survey	HI	Q		6.0	6.32	97.71						1.1		33.0		96.56	0.40	0.10		0.10	0.04	2.2		2.0		97.30	0.20	0.60		0.60	0.06	
Date	(ft)	(cfs)		13.0	6.71	97.32						1.1		34.0		96.26	0.70	0.30		0.30	0.21	2.2		2.6		97.10	0.40	0.15		0.15	0.03	
9/21/1990	104.03	0.9		16.0	6.37	97.66						1.1		35.0		96.16	0.80	0.10		0.10	0.08	2.2		3.0		97.05	0.45	0.48		0.48	0.10	
5/9/1991	103.36	5.3		18.0	6.51	97.52						1.1		36.0		96.06	0.90	0.25		0.25	0.23	2.2		3.5		96.75	0.75	0.84		0.84	0.32	
5/25/1993	103.72	12.7		25.0	5.99	98.04						1.1		37.0		96.01	0.95	0.25		0.25	0.24	5.4		4.0		96.50	1.00	0.57		0.57	0.29	
				31.5	5.94	98.09						1.1		38.0		96.06	0.90	1.10		1.10	0.99	5.4		4.5		96.40	1.10	0.79		0.79	0.43	
				33.0	7.38	96.65	0.00	0.00		0.00	0.00	2.2		39.0		96.16	0.80	1.70		1.70	1.36	4.2		5.0		96.40	1.10	1.28		1.28	0.70	
				34.0		96.34	0.30	0.00		0.00	0.00	2.2		40.0		96.26	0.70	1.55		1.55	1.09	2.3		5.5		96.30	1.20	1.31		1.31	0.79	
				35.0		96.09	0.55	0.00		0.00	0.00	2.2		41.0		96.46	0.50	1.10		1.10	0.55	2.1		6.0		96.15	1.35	1.82		1.82	1.23	
				36.0		96.04	0.60	0.00		0.00	0.00	2.2		42.0		96.66	0.30	0.80		0.80	0.24	2.1		6.5		96.00	1.50	1.78		1.78	1.34	
				37.0		96.04	0.60	0.21		0.21	0.13	5.4		43.0		96.76	0.20	0.15		0.15	0.03	2.1		7.0		95.85	1.65	1.91		1.91	1.58	
				38.0		96.14	0.50	0.91		0.91	0.46	5.4		44.0		96.95	0.01	0.00		0.00	0.00	2.1		7.5		95.75	1.75	1.89		1.89	1.65	
				39.0		96.24	0.40	0.84		0.84	0.34	4.2		45.0		96.91	0.05	0.20		0.20	0.01	1.1		8.0		95.65	1.85	1.96		1.96	1.81	
				40.0		96.44	0.20	0.00		0.00	0.00	2.3		46.0		96.76	0.20	0.50		0.50	0.10	9.2		8.5		95.90	1.60	1.42		1.42	1.14	
				41.0	7.40	96.63						2.1		47.0		96.56	0.40	0.20		0.20	0.08	9.2		9.0		96.15	1.35	1.64		1.64	1.11	
				45.0	7.23	96.80						1.1		48.0		96.46	0.50	0.10		0.10	0.07	2.9		9.5		96.55	0.95	0.56		0.56	0.19	
				47.0	7.45	96.58						9.2	RWE	49.8		96.86	0.10	0.00		0.00	0.00	2.9		9.7		97.20	0.30	0.00		0.00	0.00	
				49.0	7.00	97.03						2.9											RWE	9.9		97.50	0.00	0.00		0.00	0.00	
				50.5	6.20	97.83						1.2																			
				51.5	5.54	98.49						1.2																			
				55.0	5.32	98.71						1.2																			
			RWP	59.0	5.08	98.95						2.2																			

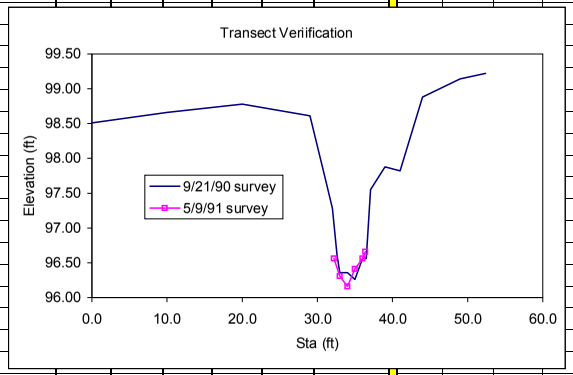


This is Q-transect for SY-9. Velocity-Depth measurements were not survey at any of the 3 transects.

Stream:	Sycan River																																	
Site:	SY-9			21-Sep-90											9-May-91											25-May-93									
Transect:	2				Sta	FS	Ground	Depth	Vel (ft/s)			q			Sta	FS	Ground	Depth	Vel (ft/s)			q			Sta	FS	Ground	Depth	Vel (ft/s)			q	
Habitat:	Run				(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate		(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate		(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate
			LWP	0.0	6.56	97.47						1.1	LWE	32.2		96.60	0.40	0.00		0.00	0.00	2.2										
Survey	HI	Q		10.0	6.22	97.81						1.1		33.0		96.30	0.70	0.15		0.15	0.09	2.2										
Date	(ft)	(cfs)		20	6.10	97.93						1.1		34.0		96.30	0.70	0.10		0.10	0.07	2.2										
9/21/1990	104.03	1.2		26	5.69	98.34						1.1		35.0		96.30	0.70	0.55		0.55	0.39	2.2										
5/9/1991	103.36	4.3		31	5.58	98.45						1.1		36.0		96.30	0.700	0.550		0.55	0.39	2.5										
5/25/1993	103.72		LWE	32.5		96.57	0.10	0		0.00	0.00	2.2		37.0		96.20	0.80	2.20		2.20	1.76	5.4										
				33		96.37	0.30	0		0.00	0.00	2.2		38.0		96.25	0.75	1.75		1.75	1.31	4.5										
				34		96.17	0.50	0		0.00	0.00	2.2		39.0		96.50	0.50	0.45		0.45	0.23	4.2										
				35		96.17	0.50	0		0.00	0.00	2.2		40.0		96.80	0.20	0.15		0.15	0.02	2.9										
				36		96.27	0.40	0.43		0.43	0.17	2.5	RWE	40.6		97.00	0.00	0.00		0.00	0.00	2.9										
				37		96.27	0.40	1.61		1.61	0.64	5.4																				
				38		96.27	0.40	0.84		0.84	0.34	4.5																				
				39		96.57	0.10	0.28		0.28	0.02	4.2																				
			RWE	39.1		96.67	0.00	0		0.00	0.00	2.9																				
				44	6.52	97.51						1.1																				
				47	6.10	97.93						1.1																				
				48	5.46	98.57						1.1																				
				52	5.00	99.03						1.1																				
			RWP	56.9	4.82	99.21						1.1																				



Stream:	Sycan River		21-Sep-90										9-May-91										25-May-93									
Site:	SY-9			Sta	FS	Ground	Depth	Vel (ft/s)			q			Sta	FS	Ground	Depth	Vel (ft/s)			q			Sta	FS	Ground	Depth	Vel (ft/s)			q	
Transect:	3			(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate		(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate		(ft)	(ft)	(ft)	(ft)	$V_{0.2/0.6}$	$V_{0.8}$	Ave	(cfs)	substrate
Habitat:	Run																															
			LWP	0.0	6.25	98.51						1.1	LWE	32.2		96.56	0.50	0.70		0.70	0.14	1.1										
Survey	HI	Q		10.0	6.10	98.66						1.1		33.0		96.31	0.75	1.00		1.00	0.67	5.6										
Date	(ft)	(cfs)		20	5.98	98.78						1.1		34.0		96.16	0.90	1.40		1.40	1.26	5.4										
9/21/1990	104.76	1.3		29	6.15	98.61						1.1		35.0		96.41	0.65	1.75		1.75	1.14	5.4										
5/9/1991	103.36	3.7		31	7.02	97.74						1.1		36.0		96.56	0.50	1.45		1.45	0.51	5.4										
5/25/1993	103.72			32	7.48	97.28						1.1	RWE	36.4		96.66	0.40	0.15		0.15	0.01	4.3										
			LWE	32.6		96.61	0.15	0.41		0.41	0.01	1.1																				
				33		96.36	0.40	0.38		0.38	0.11	5.6																				
				34		96.36	0.40	1.03		1.03	0.41	5.4																				
				35		96.26	0.50	1.17		1.17	0.59	5.4																				
				36		96.56	0.20	0.86		0.86	0.13	5.4																				
			RWE	36.5		96.56	0.20	0.32		0.32	0.02	4.3																				
				37.1	7.21	97.55						2.1																				
				39	6.88	97.88						2.1																				
				41	6.94	97.82						2.1																				
				44	5.88	98.88						2.1																				
				49	5.62	99.14						2.1																				
			RWP	52.4	5.54	99.22						2.1																				



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          Sycan River SY_9 05/09/91
RUN                          MID                                    TRANSECT 1
IOC       110110000000001000101000
QARD   0.5
QARD   0.8
QARD   1.1
QARD   1.5
QARD   2.0
QARD   2.5
QARD   3.0
QARD   3.5
QARD   4.0
QARD   4.4
QARD   5.0
QARD   5.5
QARD   6.0
QARD   6.5
QARD   7.0
QARD   7.5
QARD   8.0
QARD   8.5
QARD   9.0
QARD   9.5
QARD  10.0
QARD  10.5
QARD  11.0
QARD  11.5
QARD  12.0
QARD  12.7
QARD  14.0
QARD  15.0
QARD  16.0
QARD  18.0
XSEC1000.0      0.00 1.0     96.42    0.0073
    1000.0  0.0 97.7  6.0 97.7 13.0 97.3 16.0 97.7 18.0 97.5 25.0 98.0
    1000.0 31.5 98.1 32.2 97.0 33.0 96.6 34.0 96.3 35.0 96.2 36.0 96.1
    1000.0 37.0 96.0 38.0 96.1 39.0 96.2 40.0 96.3 41.0 96.5 42.0 96.7
    1000.0 43.0 96.8 44.0 96.9 45.0 96.9 46.0 96.8 47.0 96.6 48.0 96.5
    1000.0 49.8 96.9 50.5 97.8 51.5 98.5 55.0 98.7 59.0 99.0
NS  1000.0       1.1       1.1       1.1       1.1       1.1       1.1
NS  1000.0       1.1 0.3   2.2 0.3   2.2       2.2 0.4   2.2       2.2
NS  1000.0 0.20  5.4 0.15  5.4       4.2       2.3       2.1       2.1
NS  1000.0 .075  2.1 .085  2.1       1.1 .09   9.2 .15   9.2 .30   2.9
NS  1000.0 .40   2.9 .5    1.2       1.2       1.2       2.2
WSL 1000.0     96.57     96.60     96.66     96.70     96.76     96.81
WSL 1000.0     96.86     96.90     96.93     96.96     97.01     97.04
WSL 1000.0     97.08     97.12     97.15     97.18     97.21     97.24
WSL 1000.0     97.28     97.30     97.34     97.36     97.39     97.42
WSL 1000.0     97.45     97.48     97.54     97.59     97.63     97.70
CAL11000.0     96.96       4.4
VEL11000.0                                    0.00 0.10 0.30 0.10 0.25
VEL11000.0 0.25 1.10 1.70 1.55 1.10 0.80 0.15 0.00 0.20 0.50 0.20 0.10
VEL11000.0 0.00
CAL21000.0     96.67       1.1
VEL21000.0
VEL21000.0
VEL21000.0
CAL31000.0     97.50      12.7
VEL31000.0
VEL31000.0
VEL31000.0
ENDJ
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          Sycan River SY_9 05/09/91
RUN                          MID                                    TRANSECT 2
IOC       1101100100001000101000
QARD   0.5
QARD   0.8
QARD   1.1
QARD   1.5
QARD   2.0
QARD   2.5
QARD   3.0
QARD   3.5
QARD   4.0
QARD   4.4
QARD   5.0
QARD   5.5
QARD   6.0
QARD   6.5
QARD   7.0
QARD   7.5
QARD   8.0
QARD   8.5
QARD   9.0
QARD   9.5
QARD  10.0
QARD  10.5
QARD  11.0
QARD  11.5
QARD  12.0
QARD  12.7
QARD  14.0
QARD  15.0
QARD  16.0
QARD  18.0
XSEC1000.0       0.00 1.0     96.20    0.0073
    1000.0  0.0 97.5 10.0 97.8 20.0 97.9 26.0 98.3 31.0 98.5 32.2 96.6
    1000.0 33.0 96.3 34.0 96.3 35.0 96.3 36.0 96.3 37.0 96.2 38.0 96.3
    1000.0 39.0 96.5 40.0 96.8 40.6 97.0 44.0 97.5 47.0 97.9 48.0 98.6
    1000.0 52.0 99.0 56.9 99.2
NS  1000.0        1.1        1.1        1.1        1.1        1.1        2.2
NS  1000.0        2.2 0.4    2.2        2.2        2.5 0.06   5.4 .065   4.5
NS  1000.0 0.08   4.2 0.10   2.9        2.9        1.1        1.1        1.1
NS  1000.0        1.1        1.1
WSL 1000.0     96.62      96.65      96.70      96.74      96.80      96.85
WSL 1000.0     96.90      96.94      96.97      96.99      97.04      97.08
WSL 1000.0     97.11      97.15      97.18      97.22      97.25      97.28
WSL 1000.0     97.31      97.34      97.37      97.39      97.42      97.45
WSL 1000.0     97.48      97.51      97.57      97.61      97.65      97.73
CAL11000.0     97.00        4.4
VEL11000.0                            0.00 0.15 0.10 0.55 0.55 2.20 1.75
VEL11000.0 0.45 0.15 0.00
CAL21000.0     96.67        1.1
VEL21000.0
VEL21000.0
CAL31000.0     97.51      12.7
VEL31000.0
VEL31000.0
ENDJ
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          Sycan River SY_9 05/09/91
RUN                          MID                                    TRANSECT 3
IOC       11011001000010001010 00
QARD   0.5
QARD   0.8
QARD   1.1
QARD   1.5
QARD   2.0
QARD   2.5
QARD   3.0
QARD   3.5
QARD   4.0
QARD   4.4
QARD   5.0
QARD   5.5
QARD   6.0
QARD   6.5
QARD   7.0
QARD   7.5
QARD   8.0
QARD   8.5
QARD   9.0
QARD   9.5
QARD  10.0
QARD  10.5
QARD  11.0
QARD  11.5
QARD  12.0
QARD  12.7
QARD  14.0
QARD  15.0
QARD  16.0
QARD  18.0
XSEC1000.0      0.00 1.0     96.20    0.0073
    1000.0  0.0 98.5 10.0 98.7 20.0 98.8 29.0 98.6 31.0 97.7 32.0 97.3
    1000.0 32.2 96.6 33.0 96.3 34.0 96.2 35.0 96.4 36.0 96.6 36.4 96.7
    1000.0 36.5 96.6 37.1 97.6 39.0 97.9 41.0 97.8 44.0 98.9 49.0 99.1
    1000.0 52.4 99.2
NS  1000.0       1.1       1.1       1.1       1.1       1.1 .10   1.1
NS  1000.0 .09   1.1 .10   5.6       5.4 .065  5.4 .060  5.4 0.07  4.3
NS  1000.0 0.08  4.3 .06   2.1 .1    2.1       2.1       2.1       2.1
NS  1000.0       2.1
WSL 1000.0     96.71     96.74     96.79     96.83     96.88     96.93
WSL 1000.0     96.97     97.01     97.04     97.07     97.12     97.15
WSL 1000.0     97.19     97.22     97.26     97.29     97.32     97.35
WSL 1000.0     97.38     97.41     97.44     97.46     97.49     97.52
WSL 1000.0     97.54     97.58     97.64     97.68     97.72     97.79
CAL11000.0     97.06       4.4
VEL11000.0                                0.70 1.00 1.40 1.75 1.45 0.15
VEL11000.0 0.32
CAL21000.0     96.79       1.1
VEL21000.0
VEL21000.0
CAL31000.0     97.59      12.7
VEL31000.0
VEL31000.0
ENDJ
```