12-4-2009

Ex. 277-US-461

Unknown

9/23 - 9/24 1997

LOW FLOW

"Rite in the Rain®"

ALL-WEATHER

LINE RULE

Spiral Notebook

Spring Creek
WM-17

No. 393
32 Sheets
4 5/8" x 7"

WM-17 9/23/97

Spring Cr.

Site Location / Directions:

FROM CHILOQUIN, TAKE 97 NORTH to COLLIER STATE PARK. TURN LEFT INTO MUSEUM / PICNIC AREA. FOLLOW SIGNS to PICNIC AREA PARKING. SITE IS LOCATED IN PICNIC AREA. BOUNDARIES ARE FROM CYCLONE FENCE at DOWNSTREAM END of PICNIC AREA SEPERATING the PICNIC AREA FROM MUSEUM to FENCE at UPSTREAM END of PICNIC AREA SEPERATING PICNIC AREA FROM PRIVATE BOAT RENTAL.

ALL HEADPINS and BM'S ARE IN the PICNIC AREA on the RIVER RIGHT (LOOKING DOWNSTREAM) BANK.

WM-17
SPRING CREEK

9/23/97

crew: M. Gagnen
W. Swaney

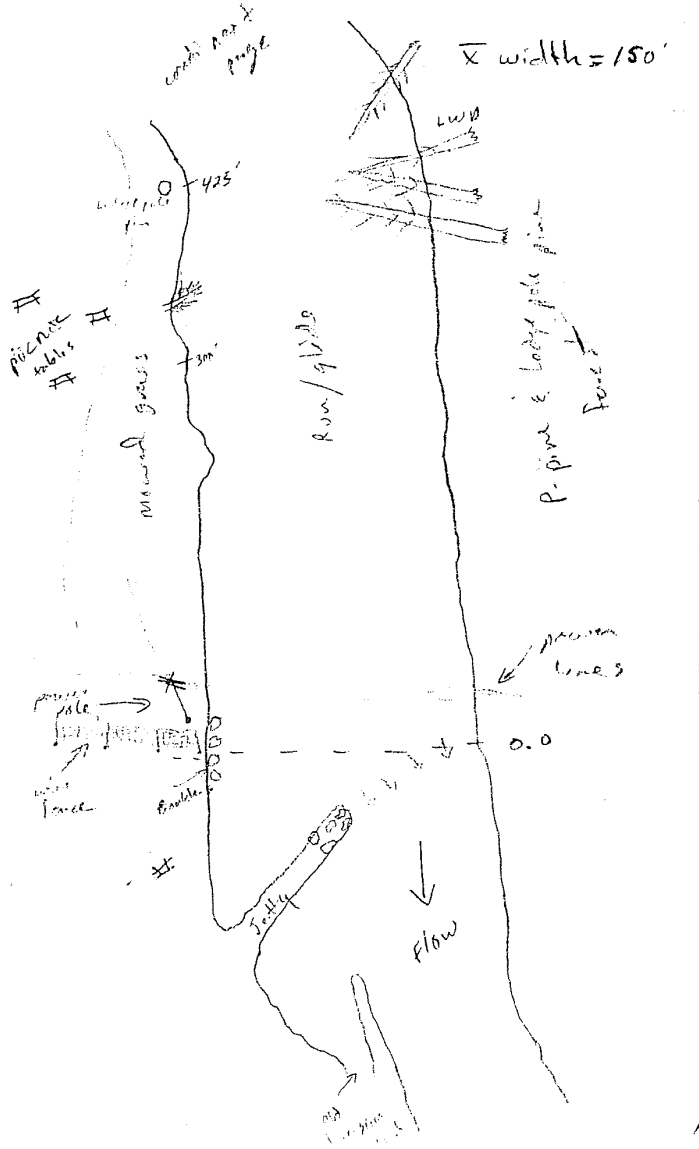
	In	Out
Time	10:00	3:45
S.G	0.0	0.0
H_2O Temp		49.5°F

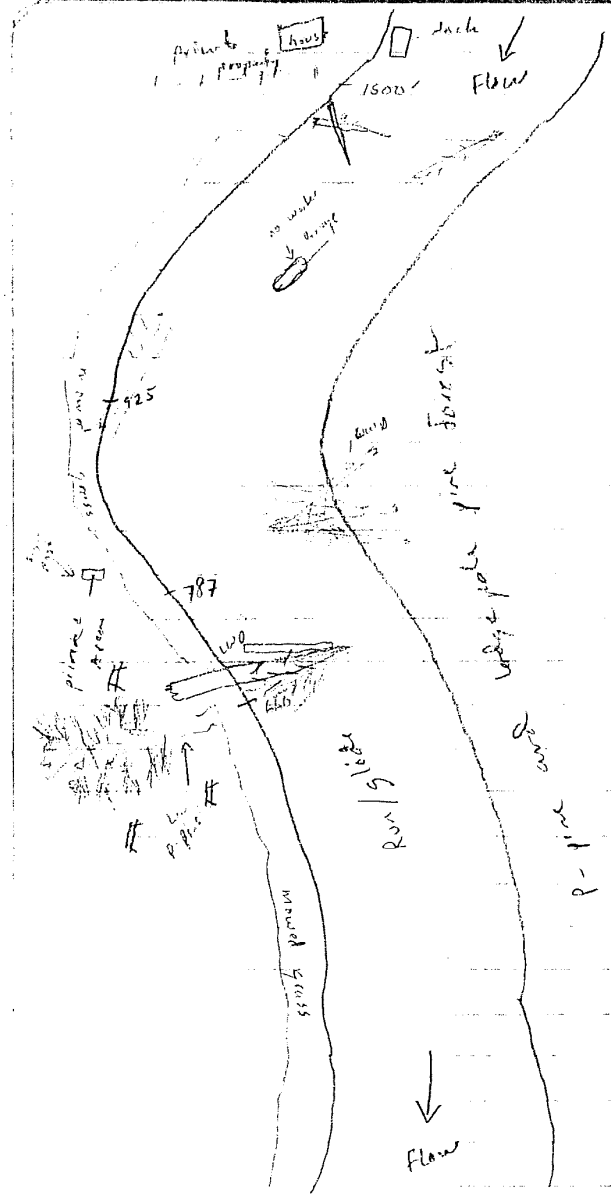
weather: clear and warm ~65°F
no precip. in past 24hrs

Equipment used: Pentax
AL-38 936157

Comments: sample reach is confined to 1500' section of stream due to private ownership and channel alteration. The selected reach represents the dominate channel type & fish habitat found throughout all of Spring Creek. The lower ~2000' of Spring Cr were eliminated from consideration due to channel manipulations and confined bedrock channels.

WM-17 Habitat Map 9/23/97





WM-17
9/23

WM-17
9/23/97

Habitat Composition

	Total	% of Total
Run/glide :	1500	100%

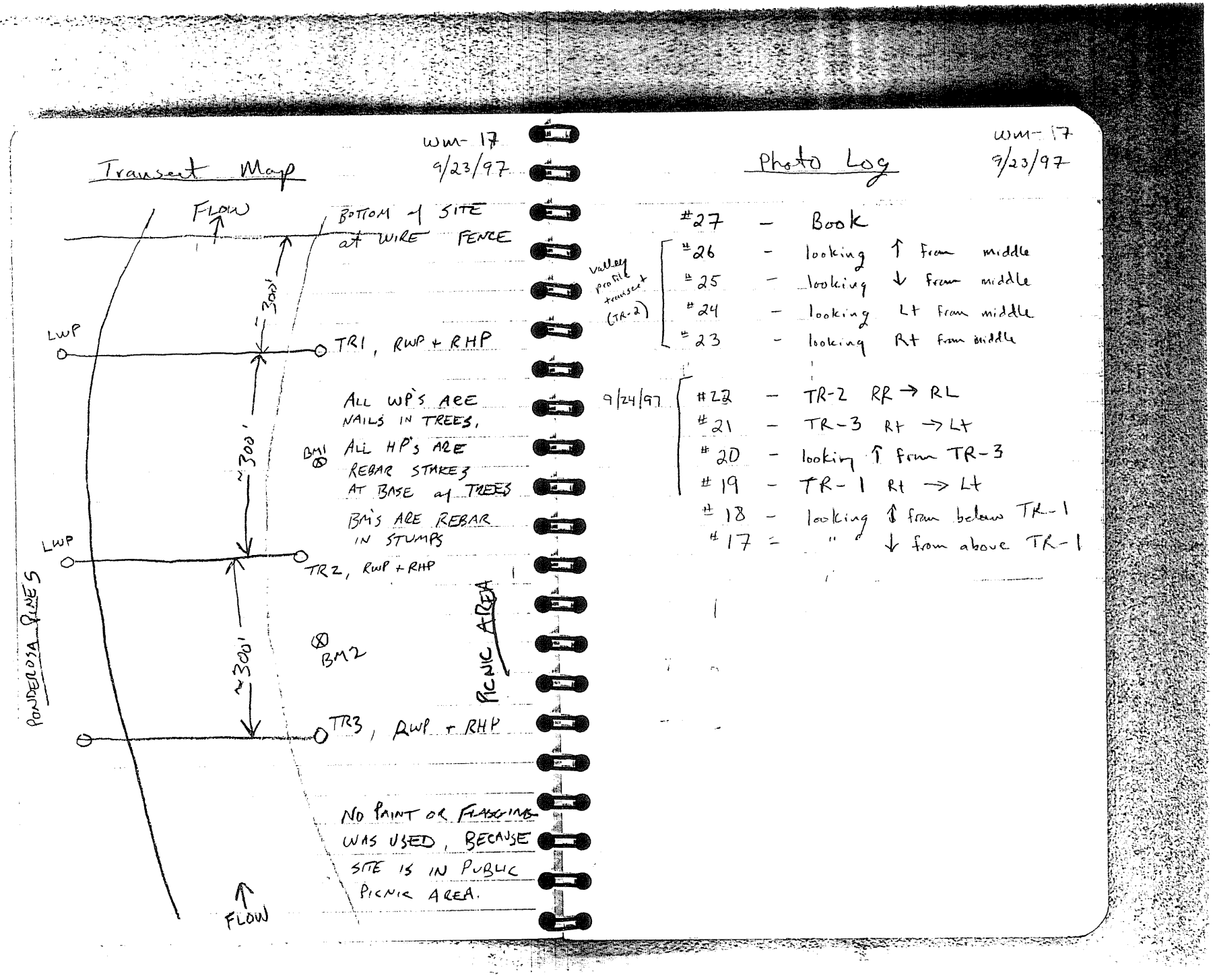
* no other habitat types present

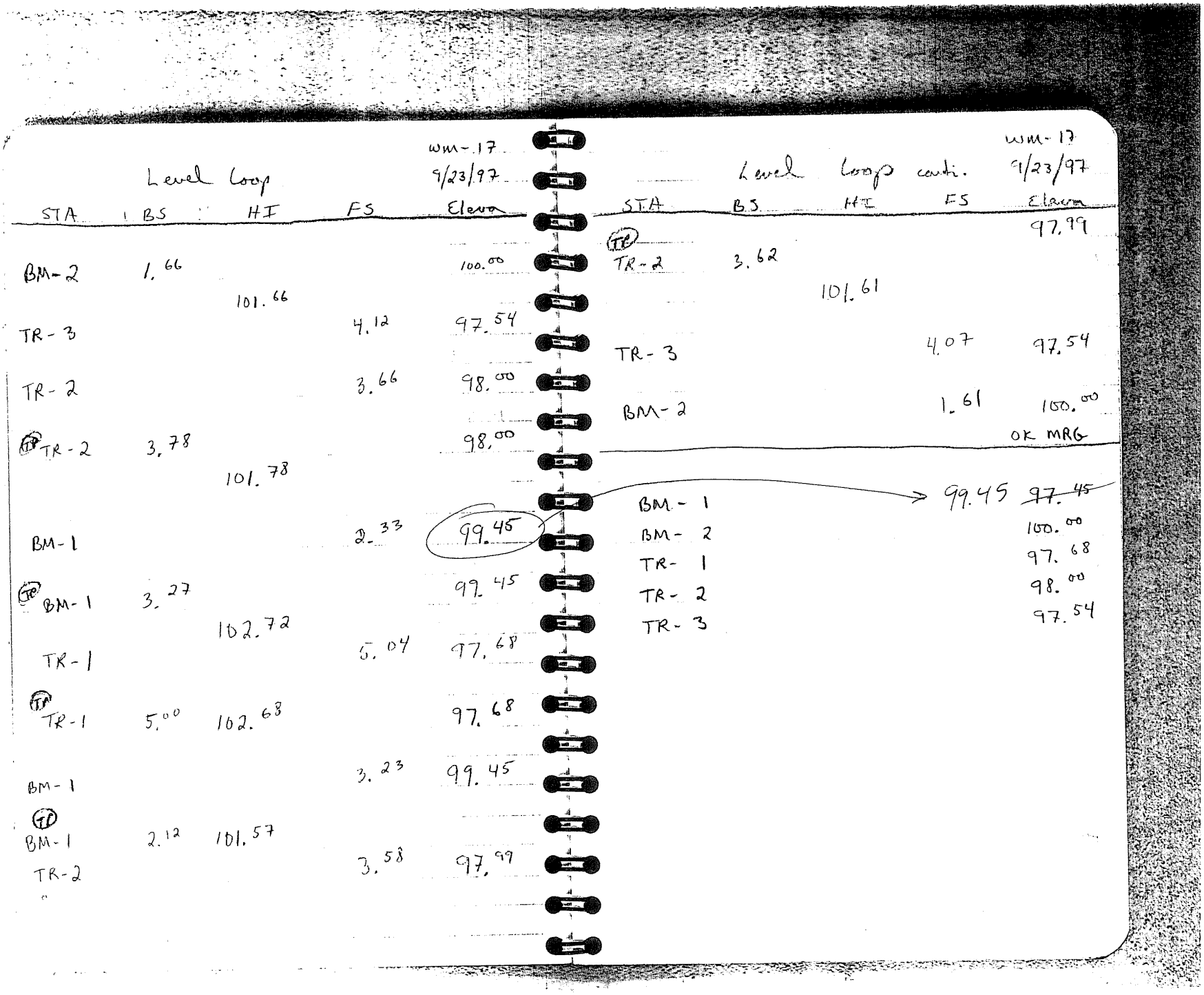
Transect selection

Random #s 2, 4, 6

TR-1 – 150 x 2 = 300'
TR-2 – 150 x 4 = 600'
TR-3 – 150 x 6 = 900'

transect placement will be measured upstream from 0.0 location.


WM-17
9/23/97
Transect Map
FLOW
BOTTOM of SITE at WIRE FENCE
~30'
LWP
TR1, RWP + RHP
ALL WP's ARE NAILS IN TREES,
ALL HP's ARE REBAR STAKES AT BASE of TREES
BM1
BM's ARE REBAR IN STUMPS
~300'
LWP
TR2, RWP + RHP
PONDEROSA PINES
BM2
PICNIC AREA
~300'
TR3, RWP + RHP
NO PAINT OR FLAGGING WAS USED, BECAUSE SITE IS IN PUBLIC PICNIC AREA.
FLOW
WM-17
9/23/97
Photo Log
#27 - Book
Valley profile transect (TR-2)
#26 - looking ↑ from middle
#25 - looking ↓ from middle
#24 - looking Lt from middle
#23 - looking Rt from middle
9/24/97
#22 - TR-2 RR → RL
#21 - TR-3 Rt → Lt
#20 - looking ↑ from TR-3
#19 - TR-1 Rt → Lt
#18 - looking ↕ from below TR-1
#17 - " ↓ from above TR-1



Level Loop

STA	BS	HI	FS	wm-17 9/23/97 Elevn
BM-2	1.66			100.00
		101.66		
TR-3			4.12	97.54
TR-2			3.66	98.00
TP TR-2	3.78			98.00
		101.78		
BM-1			2.33	99.45
TP BM-1	3.27			99.45
		102.72		
TR-1			5.04	97.68
TP TR-1	5.00	102.68		97.68
BM-1			3.23	99.45
TP BM-1	2.12	101.57		
TR-2			3.58	97.99

Level Loop cont.

STA	BS	HI	FS	wm-17 9/23/97 Elevn
				97.99
TP TR-2	3.62			
		101.61		
TR-3			4.07	97.54
BM-2			1.61	100.00
				OK MRG
BM-1				99.45 ~~97.45~~
BM-2				100.00
TR-1				97.68
TR-2				98.00
TR-3				97.54

ws / Bad slope — WM-17 — 9/23/97

STA	BS.	HI	FS	Rod	Elevn
BM-2	.87				100.00
		100.87			
+200			6.92	1.45	95.40
(upstream from TR-2)				(5.95)	
+100			8.90	3.41	95.38
0.0 (TR-2)			8.71 (5.53)	3.20	95.36
-100			8.10	2.59	95.36
-200			8.62	3.11	95.36
				(5.51)	
-200 2nd shoot			9.25	3.74	95.36
-300			6.53	1.0	95.34
				(5.53)	

Valley Profile @ TR-2 — WM-17 — 9/23/97

STA	BS	HI	FS	Elevn	Substrate
BM-2	1.77			100.00	
		101.77			
-30			2.40		Large Pile Rock Grass 2.5 ft
-20			3.14		"
-5.0			4.19		"
0.0 LWP			4.94		"
3.0			5.39		Grass 2.0 ft
5.0			5.84		"
8.0			6.30		"
11.0 LWE			6.34		"
168.6 RWE			6.25		Lawn 0.2
170			6.01		"
180			5.57		"
195			4.72		"
210			4.41		"
213 RWP			4.10		conifer trees shrubs 4.0
225			3.81		"
245			3.90		"
260			3.43		"

* valley profile extends on each side for ~ 500+ feet at last given elevation

WM - 17 9/24/97
SPRING CREEK

CREW: M. GAGNER
W. SWANEY

	IN	OUT
TIME	0930	
SC	–	–
WATER TEMP	42°F	
AIR TEMP	62°F	

WEATHER: CLEAR and WARM
NO PRECIPITATION in PAST 24 HRS.

EQUIPMENT USED: PENTAX
AL-38 936157

MARSH - McBIRNEY
MODEL: 2000 # 2000118

WM - 17 9/24/97
Spring Cr.

	Stationing Left		Right
TR - 1	435'	366	297'
TR - 2	302'	307.5	313'
TR - 3			

WM-17 TR-2 9/24/97

W.S Elevations

STA	BS	HI	FS	Rod	Elevn
	1.69				
BM-2	~~1.72~~	101.69			100.00
		~~101.72~~			98.00
TR-2 HP			3.69		~~98.03~~
			6.33		
RWS			9.40	3.07	95.36
			6.33		
LWS			9.13	2.80	95.36

* See valley profile elevations for TR-2 bank survey *

WM-17 TR-2 9/24/97

D/V measurements

STA	Depth	Vel	Sub	%D	%E	Cover/Notes
168.6	Q	Q	VEG	100	—	RWE
168.4	0.35	Q	VEG/SILT	75	—	OBJECT COVER
160	1.5	0.21	SILT/VEG	60	—	OBJECT COVER
153	2.1	0.18	SILT	100	—	—
144	2.4	0.37	SILT/SAND	75	—	—
137	2.9	.51/.51	SILT/SAND	70	—	— T/B
130	3.0	.66/.60	GR/SAND	60	0	—
123	2.3	.93	GR/SAND	80	0	—
116	2.9	.90/.59	GR/SAND	70	0	—
109	4.2	.88/.69	SAND/GR	70	10	—
102	4.0	.67/.63	AQ VEG/SAND	60	0	—
93	3.9	.78/.69	SAND/GR	70	0	—
86	3.75	.66/.56	SAND/GR	80	0	—
79	3.4	.81/.72	SAND	100	—	—
72	3.6	.97/.72	SAND/GR	90	0	—
65	3.5	.90/.67	SAND/GR	95	0	—
58	3.2	.77/.65	SAND/GR	95	0	—
51	2.9	.69/.53	SAND	100	—	—
44	2.7	.60/.49	SAND	100	—	—
37	2.4	.25	SAND	100	—	—
30	2.1	.25	SILT	100	—	—
23	1.75	.12	SILT	100	—	—
16	1.20	.25	SILT	100	—	OBJECT COVER/LOG
11	.85	.09	SILT	100	—	OBJ/LOG
7.3	Q	Q	GRASS	100	—	LWE

WM-17 WS ELEVATIONS / BANK PROFILE
TR-3 9/24/97

STA	BS	HI	FS	ROD/Sub	ELEV
BM-2	1.47				100.00
		101.47			
			3.93		97.54
RHP			4.49	grass	
RWP = 210			5.29	"	
205			5.50	"	
200			5.78	"	
193.5 RWE			7.25	1.16	95.38
RWSE					
			7.69	1.59	95.37
LWSE			6.10		
			5.82	grass	
LWE: 30.8			4.70	grass	
27			4.27	grass/wood	
22			3.60	"	
15.5			3.11	"	
13.0			3.87	"	
8.0			4.21	grass/trees	
5.0			3.79	"	
LWP: 0.0					

WM-17 TR-3 9/24/97
Spring Cr

STA	Depth	Vel Top/Bottom	Sub	%D	%E	Cover/notes
30.8	0.0	0.0	grass	100	—	edge
31.0	0.4	0.01	silt	100	—	veg/obj
39	1.0	0.22	silt/sand	90	—	—
47	1.5	0.42	sand/silt	70	—	—
55	2.0	0.59	sand	100	—	—
63	2.55	0.73 / 0.61	"	"	—	—
71	2.7	0.76 / 0.53	gravel/sand	50	0	—
79	2.9	0.69 / 0.55	"	60	0	—
87	3.0	0.74 / 0.62	sand/gravel	70	0	—
95	3.15	0.71 / 0.59	"	80	0	—
103	3.45	0.71 / 0.64	"	80	10	—
111	4.2	0.70 / 0.50	gravel/sand	50	10	—
119	4.5	0.68 / 0.39	gravel/cobble	80	0	—
127	4.4	0.59 / 0.39	gravel/sand	60	10	—
135	4.1	0.73 / 0.52	"	50	10	—
143	3.7	0.67 / 0.54	"	70	10	—
151	3.6	0.62 / 0.49	sand/gravel	80	0	—
159	3.4	0.57 / 0.44	"	70	0	—
167	3.05	0.43 / 0.32	"	90	"	—
175	2.50	0.34 / 0.14	silt	100	—	obj/wood
183	1.60	0.15	silt/sand	70	—	"
192.7	0.8	0.01	"	70	—	edge
193.3	0.0	0.0	grass	100	—	—
RWE						

WM-17 TR-1 WS Elevs./Bank profile
9/24/97

STA	BS	HI	FS	Rod/Sub	Elevs
BM-1	2.19	101.64			99.45
TR-1 HP			3.96		97.68
RWP = 198.1			4.52	grass/trees	
192			5.05	grass	
182			5.42	"	
176			5.82	"	
174.3 RWE			6.22		
RWSE			7.43	1.13	
			6.30		95.34
LWSE			7.58	1.27	
			6.31		95.33
13.4 LWE			6.26	grass	
12			5.70	grass (2.5)	
9			5.29	"	
6			4.83	grass/duff	
3			4.47	duff/grass	
0.0 LWP (base)			3.72	tree/shrub (4.0	

WM-17 TR-1 D/W 9/24/97

STA	Depth	Top Vel Bottom	sub	%D	%E	Cover/notes
13.4 LWE	0.0	0.0	grass			
13.8	0.5	0.02	sand/gravel	80	—	edge
22	1.45	0.26	silt/sand	60	—	
30	1.70	0.42	sand/gravel	60	ø	—
38	1.65	0.48	bed/sand	80	ø	dbj*/log
46	1.60	0.12	bed/sand	90	ø	"
54	2.35	0.15	bed/gravel	60	ø	
62	3.50	0.73 0.27	gravel/sand	60	ø	—
70	4.0	0.56 0.24	"	80	10	—
78	4.3	1.11 0.70	cobble/sand	70	10	—
86	4.4	0.87 0.31	"	70	10	—
98	4.6	0.68 0.45	sand/cobble	60	ø	—
106	3.5	0.73 0.73	sand/gravel	80	ø	—
114	2.8	0.86 0.92	sand/gravel	60	ø	—
122	2.9	0.68 0.77	"	80	ø	—
130	2.9	1.06 0.93	sand/gravel	"	ø	—
138	2.8	1.11 0.77	"	"	ø	—
146	2.6	0.83 0.56	sand	100	ø	—
154	2.4	0.37	sand/silt	60	ø	—
162	2.0	0.07	silt/sand	80	ø	—
170	1.2	0.05	silt	100	ø	—
174	0.7	-0.02	silt/sand	90	ø	edge
RWE = 174.3	0.0	0.0	grass	100	ø	—

WM-17 SPRING CREEK 9-29-97

HABITAT DESCRIPTION

SITE IS COMPRISED of 100% RUN HABITAT. AVERAGE DEPTH ~ 3.0 FT. CENTER of CHANNEL IS DEEP, WITH ESTIMATED DEPTHS UP TO 6-8 FT. SUBSTRATE IS MAINLY SAND WITH SMALL GRAVEL. SOME AQUATIC VEGETATION in CENTER of CHANNEL ad SILT NEAR BANKS. APPROXIMATELY 25% of the SITE IS COMPRISED of AREAS of SPAWNING SIZED GRAVELS (1-4 INCH DIAM). THESE AREAS FORM DUNES ACROSS CHANNEL AVERAGING ~750 SQ FT. FALLEN TREES ad SLIGHTLY UNDERCUT BANKS PROVIDE COVER.

RIPARIAN IS PINE FOREST WITH GRASS ad SHRUB UNDERSTORY UP TO the CHANNEL (EXCEPT in PICNIC AREA WHERE MOWED LAWN EXTENDS UP to 50 FT FROM CHANNEL.) CREEK IS SPRING FED IN A SMALL WATERSHED WITH LITTLE VARIABILITY IN FLOWS THROUGHOUT YEAR. PARK SUPERVISOR STATED THAT FLOWS REMAINED CONSTANT DURING the FLOOD EVENT in JAN '97.

5-6 DECAYED TROUT CARCASSES WERE FOUND THROUGHOUT SITE (APPROX 10-12", UNKNOWN SPECIES) AND WERE THOUGHT to BE RESULT of FISH THAT WERE RELEASED AFTER BEING CAUGHT BY FISHERMEN.

WM-17 Spring Cr. 9/24/97
Spawning Riffle

	In	Out
Time	3:44 pm	
S.G	1.28	
H2O TEMP	RL	49.0 F

STAFF GAGE WAS ON ~~RR~~ BANK, UNKNOWN OWNER.

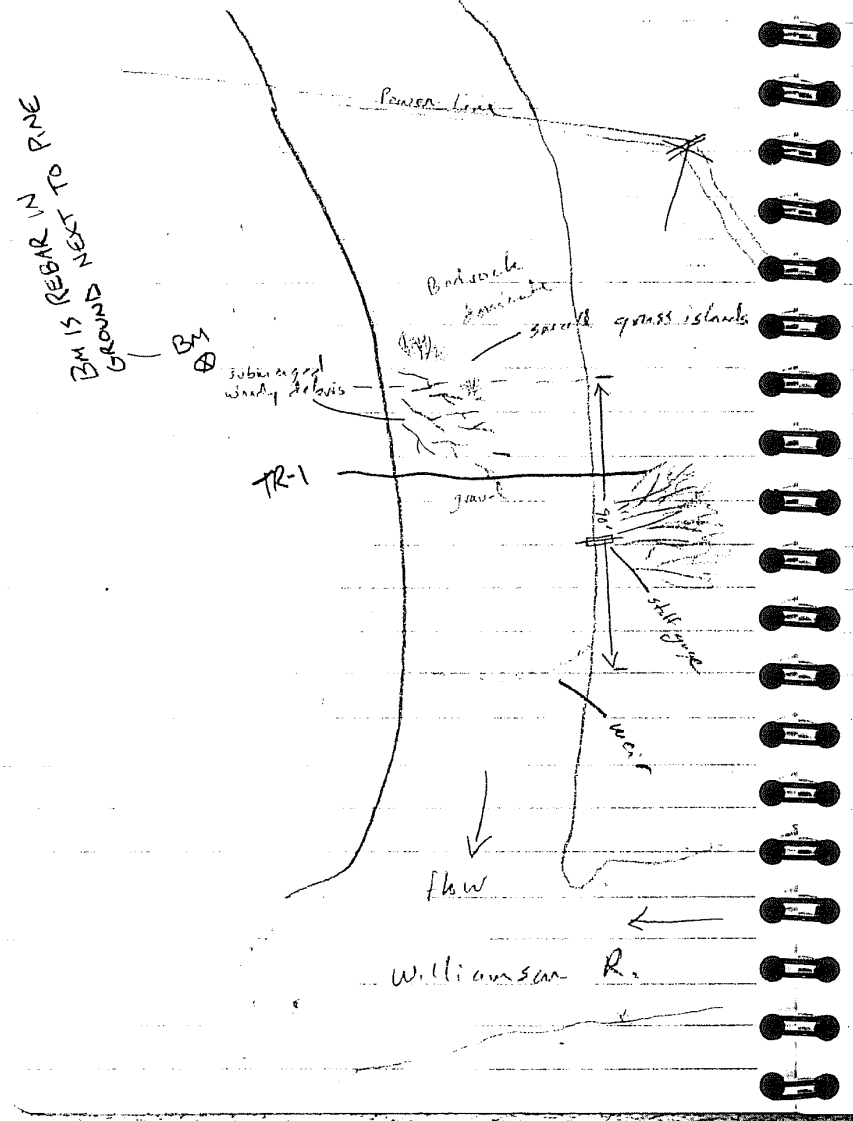
Crew: M. Gagner
W. Swaney

equipment:

Notes/comments: A single transect will be placed across a main-mode spawning riffle located just upstream of the confluence of Spring Creek and the Williamson R. A weir has been placed within the channel to trap gravel and create spawning conditions. The transect will be placed ~1/2 way between the weir and the end of the spawning gravel distribution.

wm-17 Spawning Riffle 9/24/97

site Map

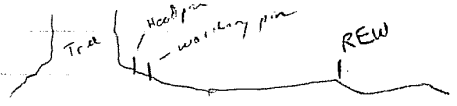


wm-17 Spawning Riffle 9/24/97

WS Elevations / Bank profile

STA	BS	H I	FS	Rod/SUBSTRATE	Elevn
BM	2.81	102.81			100.00
TR-1 (HP)			2.50		
139.1 (RWP BASE)			2.72	SHRUB 3.0'	
129.0			5.78	GRASS 1.0'	
127.0			6.38	GRASS 2.0'	
125.0			7.83	GRASS 2.0'	
124.8 (REW)			7.30	GRASS 2.0'	
RWS			9.23	1.90	7.33
LWS			8.35	1.08	7.27
12.6 (LEW)			7.29		
10.0			6.47	GRASS/SHRUB 3.5'	
6.5			5.80	"	
0.0 (LWP BASE)			4.71	"	
-10.0			3.44	"	

* River right working pin & head pin are rebar located on river side of large P-pine. Head pin is located ~ 0.2 behind working pin



wm-17 Spawning Riffle D/V 9/24/97
Spring Cr.

STA	Depth	Vel	Sub	%D	%E	Cover/Notes
12.6 LEW	0	0				
15.0	0.45	0.35	GR/SAND	75	20	—
20.0	1.15	1.10	GRAVEL	100	0	—
25.0	1.80	0.94	GRAVEL	100	0	—
30	2.1	1.35	GRAVEL	100	0	—
35	~~2.4~~ 2.3	0.94	GR/SAND	70	20	—
40	2.4	1.31	GR/SAND	75	20	—
45	2.7	1.46/.78	GR/SAND	80	10	T/B
50	2.7	1.0/-.04	GR/SAND	90	10	⊛ NO REASON FOR NEG FLOW COULD BE SEEN
47.5	2.7	1.08/.12	GR/SAND	90	10	
52.5	3.0	1.12/-.14	GR/SAND	90	10	⊛ —
55.0	3.2	1.14/-.09	GR/COBBLE	75	20	⊛ —
60	3.1	1.34/0.26	GR/COBBLE	80	20	—
65	3.0	2.07/1.57	GR/SAND	90	0	—
70	2.7	1.44/0.45	GR/SAND	90	0	—
75	3.0	2.14/1.72	GR/BEDROCK	75	0	—
80	2.45	1.77	GR/SAND	75	20	—
85	2.3	0.70	GR/SAND	70	0	OBJ COVER
90	1.6	0.63	GR/SAND	60	10	VEL COVER
95	2.6	0.62/0.51	SAND/GR	60	10	—
100	2.8	0.72/0.82	GR/BED	70	0	—
105	2.4	0.87	GR/SAND	80	0	—
110	1.4	1.28	GR/SAND	70	0	—
115	2.15	0.83	GR/VEG	60	0	—

wm-17 Spawning Riffle 9/24/97
Spring Cr.

Photo Log

#16 TR-1, LOOKING RR → RL
#15 TR-1, LOOKING RL → RR

TR-1 CONT.

STA	DEPTH	VEL	SUB	%D	%E	COVER/NOTES
120	2.05	1.31	GR/VEG	60	0	—
124.7	1.10	0.24	SAND/BED	80	0	EDGE COVER
124.8	Q	Q	GRASS	—	—	—

⊛ NOTE ON NEGATIVE VELOCITIES:
NO APPARENT CAUSE FOR NEGATIVE VELOCITIES at 0.8 (BOTTOM) MEASUREMENTS COULD BE DETERMINED. WHEN SUBSTRATE WAS DISTURBED WITH BOOT, SAND ad SMALL GRAVELS WERE OBSERVED MOVING UPSTREAM

SPRING CREEK 5/14/98

SPAWNING RIFFLE

IN	0845
OUT	1045

WEATHER : OVERCAST, ~50°F AIR TEMP

CREW : W. SWANEY
A. POOL

EQUIPMENT :
MARSH McBIRNEY # 2000118
PENTAX AL-M4 # 811909

STAFF GAGE : 1.33

PHOTO LOG

#	
2	RR → RL
3	RR look D/S
4	RL → RR
5	RL look D/S
6	RL look U/S

SPRING CREEK - SPAWNING RIFFLE
5/14/98
LEVEL LOOP

STA	BS	HI	FS	ELEVATION
BM-1	2.97	102.97		100.00
TR-1 (HP)			2.67	100.30
TR-1	2.18			100.30
(TP)		102.48		
BM-1			2.48	100.00

OK WMS

NOTE on DEPTH / VELOCITY MEASUREMENTS

- VEL_1 IS TOP VELOCITY WHEN DEPTH IS ≥ 2.5 FT, OR MID-VELOCITY WHEN DEPTH IS < 2.5'

- VEL_2 IS BOTTOM VELOCITY WHEN DEPTH IS ≥ 2.5 FT.

SPRING CR - SPAWNING RIFFLE

5/14/98

DEPTH / VELOCITY

STA	DEPTH	VEL 1st	VEL 2	COMMENT
149 REW	0	0	–	–
148.5	1.3	0.41	–	–
143.0	2.0	1.18	–	–
137.5	2.0	1.14	–	–
132.0	1.5	1.57	–	–
126.5	1.7	1.14	–	–
121.0	2.25	0.57	–	–
115.5	2.1	0.60	–	–
110.0	1.8	0.84	–	–
104.5	2.85	2.29	1.98	BEYOND TREE IN WATER FROM REW
99.0	3.0	1.30	1.45	SOME BOTTOM SCOUR
93.5	2.8	0.45	0.26	GOOD GRAVEL DEPOSITS
88.0	2.8	0.59	0.91	–
82.5	2.6	1.666	1.23	–
77.0	2.7	1.19	0.88	–
71.5	3.0	0.23	0.01	–
66.0	3.0	0.73	0.62	–
60.5	2.8	0.93	0.79	–
55.0	2.6	1.68	1.49	–
49.5	2.0	0.96	–	–
44.0	1.6	0.74	–	–
41.5	1.0	0.48	–	–
39.0	0.5	1.01	–	–
37.0	0.25	0.95	–	LEW
33.0	0	0		

SPRING CREEK - SPAWNING RIFFLE

5/14/98

NOTE: NO LWP WAS FOUND. TRANSECT for D/V WAS SET-UP USING THE EXISTING RWP. A SHRUB in the APPROXIMATE AREA (ALONG the TRANSECT), BUT FURTHER UP THE BANK WAS USED AS the LWP. NO NEW LWP WAS ESTABLISHED.

WM-17 SPRING CREEK -
5-14-98

IN | 11:00
OUT | 16:30

WEATHER: OVERCAST, ~50°F

CREW: W. SWANEY
A. POOL

NOTE: BM-2 WAS FOUND DRIVEN DOWN INTO THE STUMP AND CAN NO LONGER BE USED. NO NEW BM WAS ESTABLISHED.

SPRING CREEK 5/14/98
LEVEL LOOP

STA	BS	HI	FS	ELEVATION
BM-1	2.19			99.45
		101.64		
TR-1			3.95	97.69
BM-1	2.20			99.45
(TP)		101.65		
TR-2			3.65	98.00
TR-2	3.82			98.00
(TP)		101.82		
TR-3			4.27	97.55
TR-3	4.56			97.55
(TP)		102.11		
TR-2			4.11	98.00
TR-2	3.64			98.00
(TP)		101.64		
BM-1			2.19	99.45
BM-1	2.36			OK
(TP)		101.81		WMS
TR-1			4.13	97.68

SPRING CREEK WM-17 5/14/98

WS ELEVATIONS

STA	BS	HI	FS/ROD	ELEV.
BM-1	2.36	101.81		99.45
TR-1			7.56/1.09	95.34
RWSE				
TR-2	3.71	101.71		98.00
TR-2			7.17/0.84	95.38
RWSE				
TR-3	5.10	102.65		97.55
TR-3			8.31/1.06	95.40
RWSE				

SPRING CRK - WM 17 - TR-2

5-14-98

DEPTH / VELOCITY

STA	DEPTH	VEL_1^{TOP}	VEL_2	COMMENT
178.5	0	0	—	REW
178.0	0.6	0.01	—	—
171.0	1.5	0.18	—	-
164.0	2.1	0.19	-	-
157.0	2.35	0.33	-	—
150.0	2.7	0.55	0.39	—
143.0	3.3	0.60	0.45	—
136.0	2.6	0.70	0.74	—
129.0	2.6	0.90	0.87	-
122.0	4.1	0.75	0.66	—
115.0	4.25	0.64	0.68	-
108.0	4.16	0.69	0.64	—
101.0	3.8	0.78	0.63	—
94.0	3.6	0.76	0.59	-
87.0	3.5	0.97	0.88	-
80.0	3.6	0.93	0.84	-
73.0	3.4	0.92	0.79	-
66.0	3.2	0.76	0.69	-
59.0	2.85	0.66	0.59	—
52.0	2.7	0.61	0.42	—
45.0	2.4	0.25	-	—
38.0	2.0	0.21	-	—
31.0	1.6	0.16	-	—
24	1.0	0.09	=	=
18	0.5	0.01		

SPRING CRK - WM-17 TR-2 (CONT'D)

STA	DEPTH	VEL.	COMM.
17.2	0	0	LEW

SPRING CRK - WM-17 CONTROL PROFILE

STA	BS	HI	FS/ROD	ELEVATION
TR-1	3.09	100.77		97.68
RWP 225.1			2.4	
225 RWP TOP			2.14	
220			1.7	
210			2.96	
195			3.94	
180			4.27	
170			4.69	
164.3 REW			5.2	
164			6.5	
160 RWS		7.02	~~7.0/1.67~~ 1.59	95.34
150 RWS			7.8/2.39	95.36
140			8.06	
130			8.58	
125			8.94	
120			9.25	
115			9.50	
110			9.6	
105			9.44	
100			9.10	
95			8.38	
90			8.13	
85			8.60	
80			8.99	

SPRING CRK. - CONTROL PROFILE (CONT'D) 5-14-98

STA	FS/ROD	ELEV.
75	9.25	
70	9.4	
65	9.20	
60	8.95	
55	8.63	
50	8.12	
45 (LWS)	7.22 / 1.79	95.34
40 (LWS)	6.54 / 1.10	95.33
34	5.82	
33.5 (LEW)	5.28	
31.0	4.86	
25	3.70	
19	3.12	
10.6 (LWP)	2.1	
10.6 (LWP TOP)	1.8	

CONTROL PHOTO LOG.

#		
	7	RR → RL
	8	RR → RL LOOK D/S

SPRING CRK - WM 17 5-14-98

STATIONING

TR-1 (RLWP) → CONTROL (RWP) 192 FT

177

CONTROL (LWP) → TR-1 (LWP) 162 FT.

WM - 17

"Rite in the Rain"
ALL-WEATHER
LEVEL BOOK
No. 310

Spring Creek
Spawning
06/27/04

CONTENTS

PAGE	REFERENCE	DATE

WM-17 SPRING CK (spawn)

Directions: Hwy 97 N. to Collier St Park on Rt. Park. Site in Spring Ck just u/s from confluence w/ Williamson River - u/s of weir.

DATE: 6/27/01

CREW. Glen Anderson
Marcus Appy

	IN	OUT
TIME	1:40 pm	4:30 pm
SG*	4.99	4.99

* Staff gauge located ~ 300' u/s on Rt. Bank

Hot, sunny (~85° F)

Level Nikon AP-7
Swoffer 3602
Prop. 3A

Rt. Bank

GPS 42.64141 121.87656 WM17TR1

Willamson River
Bush & debris
Gabion Basket
TR 2 (121.6')
TR 1
32'
29'
120'
Wooden debris
SPRING CK.
BM = nail in Pine

WM-17 6/27/04 SPAWNING

LEVEL LOOP

STA	BS	HI	FS	ELEV	Note
BM	1.94	101.94		100.00	
TR1			5.69	96.25	
TR2			6.09	95.85	
(FP)					
TR 2	6.18			95.85	±.09
		102.03			
TR1			5.79	96.24	
BM			2.04	99.99	
120' U/S (of TR 2)			7.87	94.16	WSE

* Temporary HP - all pins were removed after completion of this sampling at request of Parks Dept.

Photo Log 06/27/04

Roll # 3

SPAWNING U/S
TR 1 R-L
TR 2 R-L
LAST SHOT = SPAWNING D/S

WM-17 6/27/04

TR1 SPAWNING Bank Survey

HI = 102.03

STA	FS	ELEV	Sub %s	Sub %	Notes
1.0	7.00		1	100	RWP
4.0	7.45		1	100	
6.6	7.95		1	100	top of bank
–	8.03	94.00	–		WSE-R
–	7.97	94.06	–		WSE-L
124.8	7.23		1	100	top of bank
125.7	6.99		1	100	LWP

WP- placed in center of large bush on left bank

TR 2 Bank

HI = 102.03

STA	FS	ELEV	SUB D/S	%	Notes
1.0	6.87		1	100	RWP
1.2	7.57		1	100	
—	7.97	94.06	—		WSE-R
—	7.93	94.10	—		WSE-L
115	7.67		1	100	
116	7.29		1	100	
122.5	6.02		1	400	LWP

D/S 8.22 93.81 WSE @ 2' above weir L-Side

D/S 8.08 93.95 " " " R-Side

WM-17 6/27/04

TR 1 SPAWNING Discharge

STA	D	V	Sub D/S	Sub %	Cover	Notes
124.4	0.81	0.1	2/1	60	2	L-Bank – Undercut 0.2'
124	1.20	0.1	2/4	70	2	
122	1.32	0.51	4/5	60	1	
117	1.40	0.47	5/4	80	4	
112	1.40	0.23	5/4	90		
107	1.90	0.79	5/4	70		
102	2.55	1.17 / 0.85	4/5	60		
97	2.30	1.21	5/4	60		
92	2.05	0.27	5/4	60		
87	2.30	0.19	5/4	60		
82	2.50	1.38 / 0.64	5/4	60		
77	2.05	0.85	5/4	70		
72	2.20	1.65	5/4	70		
67	2.25	1.49	5/4	70		
62	2.85	0.72 / 0.65	5/4	60		
57	2.75	2.07 / 1.71	5/4	60		
52	2.70	1.35 / 0.95	5/4	70		
47	2.65	2.17 / 1.40	5/4	70		
42	2.35	1.79	5/4	70		
37	1.45	1.54	5/4	70		
32	0.75	2.04	4/5	60		
27	0.80	2.46	5/4	60		
22	1.10	2.57	4/5	60		

STA	D	V	Sub. D/S	Sub. %	Cover	Notes
17	1.55	2.48	5/4	60	4	
12	1.40	2.35	5/4	70	4	
9	1.40	2.27	8/4	60	2	
7.7	0.50	0.10	9/1	60	3	
6.7	0.30	0	9/2	60	3	R-Bank undercut 0.1'

WM-17 6/27/04

TR2 SPAWNING Discharge

STA	D	V	sub D/S	sub %	cover	Notes
2.3	0.82	0.19	2/1	80	2	R-Bank-undercut 0.5'
3.0	1.34	0.48	3/4	70	4	
8.0	1.70	1.52	4/5	60	4	
13	1.40	1.06	4/5	80		
18	1.70	1.28	5/4	60		
23	2.35	0.94	5/3	70		
28	2.25	1.46	4/5	60		
33	2.20	0.98	4/5	60		
38	2.20	0.95	5/4	60		
43	1.20	2.09	5/4	70		
48	0.70	2.43	4/5	60		
53	2.00	2.30	5/4	60		
58	1.35	2.37	5/4	60		
63	1.60	2.19	5/4	60		
68	1.55	2.39	4/5	70		
73	1.25	2.79	4/5	70		
78	1.20	2.54	5/4	60		
83	1.45	1.75	5/4	60		
88	1.90	1.30	4/5	70		
93	2.10	1.52	5/4	80		
98	2.20	1.25	5/4	60		
103	1.75	0.53	5/4	60		

STA	D	V	sub D/S	sub %	cover	Notes
108	1.35	0.57	5/4	80	4	
113	0.9	0.60	5/3	60	4	
114.5	0.55	0.15	5/3	70	4	
114.8	0.30	⊖	1/2	60	2	L-Bank

undercut 0.2'