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Ex. 280-US-437

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R2 Resource Consultants

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SP-5



"Rite in the Rain"

ALL-WEATHER

LEVEL BOOK

No. 310 F

8/17/04

1418.01

SP-5 Low Flow 08/17/04 SP-5 Level Loop 8/17/04

In Out	
T.M	2.45
S.G	0.0
	5.30
	5.0

Crew: M. Gayman
Ben

Equipment: Munk PLUMING SN 20050283
Cott (L) SN 8918

Photo Log: #9 looking w/5 (in TR-1)
" #10 " 2+ 7/10 TR-1
" #12 " 1+ 7/10 TR-2
" #13 " 1+ 7/10 TR-3
" #14 " 2/3 for TR-3

STA	BS	HT	FS	Elev
B.M	5.32			100.00
TR-1		105.32	4.50	100.82
TR-2			4.54	100.78
TR-3			3.50	101.82
TR-3		3.47		101.82
TR-2		105.29	4.51	100.78
TR-1			4.47	100.82
B.M			5.29	100.00
TR-3			3.47	
B.M				

SP-5 WSE 08/17/04

STA BS HI FS Eleva

105.29

TR-3

LT 11.03 94.26

RT 11.05 94.24

TR-2

LT 11.07 94.22

RT 11.15 94.14

TR-1

LT 11.23 94.06

RT 11.25 94.04

BW

5.29 100.00

SP-5 TR-1 0 & V

STA Depth Vel Notes

LWE 60.4 0.0 0.0 *LWP=1.0/RWP=260.7

63 0.3 0.0 AQ VEG.

73 0.83 -0.04 "

83 1.00 -0.04 "

93 1.00 -0.06 "

103 1.15 0.0 "

111 1.60 0.04 0.07 "

119 2.42 0.38 0.74 -0.02 "

127 2.69 0.77 0.02 "

135 2.80 0.63 -0.07 "

143 2.90 0.72 -0.01 "

151 2.95 0.73 0.14 "

159 2.85 0.82 0.0 "

167 3.10 0.84 0.0 "

175 3.05 0.94 0.0 "

183 3.10 0.94 0.0 "

191 2.92 0.94 -0.03 "

199 2.55 0.67 -0.04 "

207 1.55 0.35 "

208 0.90 0.62 "

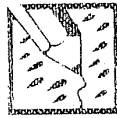
209 0.40 0.13 "

209.4 0.0 0.0 RWE

SP-5	TR-3	DE V	Notes	SP-5	TR-3	DE V	Notes
STA	Depth	Vel		STA	Depth	Vel	
63.50	0.0	0.0	LWE	60.0	0.0	0.0	LWE
66.0	0.5	0.0	AQ VEG	67	1.05	0.12	0.02
68	0.7	0.0	"	75	2.00	0.21	0.50
76	1.10	0.05	"	83	2.55	0.23	0.21
84	1.57	0.14	"	91	3.0	0.04	-0.03
92	1.70	0.32	"	99	3.32	0.0	0.0
100	2.25	0.31	"	107	3.82	0.10	0.0
108	2.55	0.04	"	115	3.80	0.43	0.0
116	2.80	0.16	"	123	3.63	0.03	0.0
124	3.10	0.21	"	131	4.10	0.54	0.0
132	3.10	0.40	"	139	3.80	0.21	0.0
140	3.15	0.56	"	147	4.50	0.49	0.0
148	3.15	0.45	"	155	4.50	0.18	0.26
156	3.05	0.64	"	163	4.40	0.76	0.24
164	3.00	0.86	"	171	4.20	0.61	0.24
172	3.10	0.73	"	179	3.80	0.36	0.52
180	3.05	0.66	"	187	3.35	0.85	0.0
188	2.80	0.77	"	195	0.60	-0.01	0.0
196	2.50	0.74	"	198	N/A	—	—
204	1.70	0.67	"				
207	1.90	0.60	OBS COVER	197.4	0.0	0.0	RWE
208	1.75	0.37	EDGE COVER				
208.8	0.0	0.0	RWE				

1.7
3.3
AQ VEG.

SP-5



"Kit in the Rain"

ALL-WEATHER

LEVEL BOOK

No. 310 F

6/26/64

SP-5 Sprague R. C. Sprague R. Town
06/26/04

	In	Out
Time	9:00	1:00
Sig	4.0	4.0

Crew: M. Gagner
C. McCellan

Equipment: MARS Model 2000

	LWE	RWE	LWS	RWS	USE X USE
TR-2	44.0	210.7	94.83	94.88	94.75
TR-1	52.8	210.7	94.64	94.59	94.62
TR-3	44.4	199.3	94.78	94.72	94.78

Photo Log
06/26/04

Photo #	Description
27	TR-2 RUN L-R
28	TR-1
29	LOOKING 45 RUN
30	TR-3 RUN
31	LOOKING D/S
32	

SP-5	Run	Level	Loop	06/26/04	TR-2	SP-5	Bank Survey	WSE
STA	BS	HT	FS	Eleva	HT	FS	Subst.	% Dam. Rod
B.M.	3.61	5.39	105.39	100.00	104.80	4.27	grass/sage	60
						4.46	"	"
TR-3						5.89	dirt/veg	"
			3.61	101.78		7.26	grass/soil	80
TR-2						9.01	"	"
			4.59	100.80		9.91	veg/silt	70
TR-1						11.30	(94.83)	(94.75) 1.33
			4.68	100.71		10.92	(94.68)	0.80
TR-1	4.09					10.22	silt/veg	60
		104.80				8.52	veg/soil	80
TR-2			4.00	100.80		7.81	"	"
						4.54	sage/soil	70
TR-3			3.02	101.78		4.70	sage/soil	60
B.M.			4.80	100.00		"	"	60

06/26/04

6/26/04

SP-5 TR-3 Bank Survey E WSE

COVER SUB % DOM

TR-2

SP-5

STA HI FS Substrate % Dom Rod

STA

✓

246.0	RWP	4.30	sage/soil	70	44.0	φ	φ	VEG/ST	80
235.5		4.93	"	"	52.0	0.05	φ	"	"
225.5		7.42	grass/soil	90	60.0	0.22	φ	"	"
210.0		8.93	"	"	68.0	1.40	0.05	"	"
199.3	RWE	10.16	grass/soil	80	76.0	1.64	0.16	"	"
194.8	RWS	11.53	(94.72)	1.485	84.0	2.30	0.18	VEG	80
66.5	LWS	11.81	(94.78) USE	1.789	92.0	2.28	0.36	SG/SD	60
44.4	LWE	9.66	veg/soil	60	100.0	2.90	0.00	VEG	"
20.4		6.78	veg/soil	70	108.0	3.20	0.03	"	"
12.8		4.28	sage/soil	70	116.0	3.28	0.15	"	"
4.0	LWP	4.08	"	60	124.0	3.50	0.65	"	"
					132.0	2.65	0.08	"	"
					140.0	3.82	0.66	"	"
					148.0	3.80	0.13	"	"
					156.0	3.80	1.06	"	"
					164.0	3.65	0.10	"	"
					172.0	3.70	0.87	"	"
					180.0	3.80	0.30	"	"
					188.0	3.35	0.91	"	"
					196.0	3.00	0.55	"	"
					204.0	2.20	0.03	"	"
					207.5	2.28	0.02	"	"
					208.0	0.80	0.01	"	"
					210.76	φ	φ	"	"

should be 3.65
- 0.04 148.04

193

94.78

94.75

94.62

SP-5 TR-1				6/26/04		TR-1			06/26/04	
STA	D	V	LOWEL	SUB	%DOM	STA	Bandw	Prof. L	% WSE	% Dom
210.7	0	0		VEG/ST	70	104.80	HI	FS	Subst.	Rad
209.0	0.40	-0.04		"	"	4.23			sage/sol	60
208.0	0.93	0.84		ST/VEG	80	4.68			"	"
207.0	1.20	0.93		"	"	6.42			sage/sol	80
199.0	2.95	0.01/0.42	VEG	ST/SD	60	9.71			"	90
191.0	3.58	0.87/0.17		ST/SG	60	10.28			veg/sol	70
183.0	3.60	0.96/0.81		"	"	11.49			(94.64)	1.33
175.0	3.65	0.83		SG/SD	70	(10.16)				
167.0	3.55	0.78/0.17		ST/SD	60	12.12			(94.59)	1.91
159.0	3.50	0.09/1.11	VEG	SD/ST	70	(10.21)				
151.0	3.50	0.63/0.03	"	"	"	10.37			veg/sol	70
143.0	3.50	0.13/0.19	VEG	veg/SD	60	9.62			veg/sol	90
135.0	3.40	1.06/0.03	"	SG/SD	70	6.61			sage/sol	60
127.0	3.20	0.15/0.76	"	SG/SD	60	5.34			"	60
119.0	3.00	0.19/0.07		"	"	4.92			"	70
111.0	2.25	0.61		ST/SG	80					
103.0	1.80	0.07	VEG	"	70					
93.0	1.55	0.08		ST/SG	80					
83.0	1.65	-0.01		"	"					
73.0	1.43	0.17		ST/SG	70					
63.0	1.05	0	VEG	ST/VEG	70					
56.0	0.35	0	"	VEG/ST	70					
52.8	0	0		"	70					

6/26/04 TR-3 RWD. SP-5

STA	D	V	COVER	SUB	%SOM
44.4	0	0	VEG	VEG/SILT	70
55.0	0.10	0	"	"	"
60.0	0.60	-0.03	"	"	"
67.0	1.71	0.53	SD/SC	SD/SC	70
75.0	2.55	0.47	ST/SG	ST/SG	60
83.0	3.25	0.04	ST/SD	ST/SD	60
91.0	3.50	0.09	VEG	VEG	60
99.0	3.95	0.0	"	"	"
107.0	4.40	0/0	"	"	"
115.0	4.35	"	"	"	"
123.0	4.20	0.0102	"	"	"
131.0	4.57	0.0101	"	"	"
139.0	4.50	0.12	"	SC/SD	60
147.0	5.00	0.69	"	"	"
155.0	5.00	0.35	"	SC/SD	70
163.0	5.00	0.84	"	"	"
171.0	4.75	0.101	"	"	"
179.0	4.36	0.61	VEG	"	"
187.0	4.00	0.16	"	ST/SD	60
195.0	1.20	0.07	"	ST/VEG	60
198.0	0.50	0.06	"	VEG/ST	70
199.3	0	0	"	"	80

SP-5 High Flow 04/10/04

Crew: M. Gagner
M. Appy

Weather: clear & warm ~75°F
no precip in past 7 days

	In	Out
Time	3:45	4:45
S.G	2.00	2.00
4/11	9:00	12:00
S.G	2.00	1.99

site setup only

(~100th of a foot change)

Equipment: Nikon Level sm:
Marsh Mc Birney Model 2000
sv: 2005060

SP-5 High Flow 04/10/04

Directions: From Chilgwin head to east on Sprague R Highway to town of Sprague R. After crossing Sprague R. (just before town) look for right hand turn onto Skeen Ranch Rd. Follow for ~1/2 miles to blue gate & college road. Access the site through wire gate that intersects college road. Follow trail through pasture to river. Call Tim Kirk or Don Gouby before accessing site.

Notes: this site was habitat mapped in September 2003 by M. Gagner & M. Appy. The site contains only run/ride habitat. The reach length is approximately 2,367'. We will randomly select a start location and then place 4 transects ~25-150' apart. The channel is fish habitat in this section of the Sprague R. is very homogeneous.

SP-5 Photo Log, 04/10/04
Roll #4

Photo # Description

- #25 - SP-5 Books on truck bumper
- #24 - looking LT → RT across TR-2
- #23 - Bench Mark
- #21 - TR-1 looking LT → RT
- #20 - TR-3 " "
- #19 - looking up/s from TR-3
- #18 - " d/s from TR-3

SP-5 Transect Placement

04/10/04

Random # for transect placement is 6.

Reach length

First transect

2,367' X 0.6 = 1,420'

will measure down 1,420' from upper extent of mapped reach & place first transect. Each subsequent transect will be placed ~125' - 150' d/s from that point

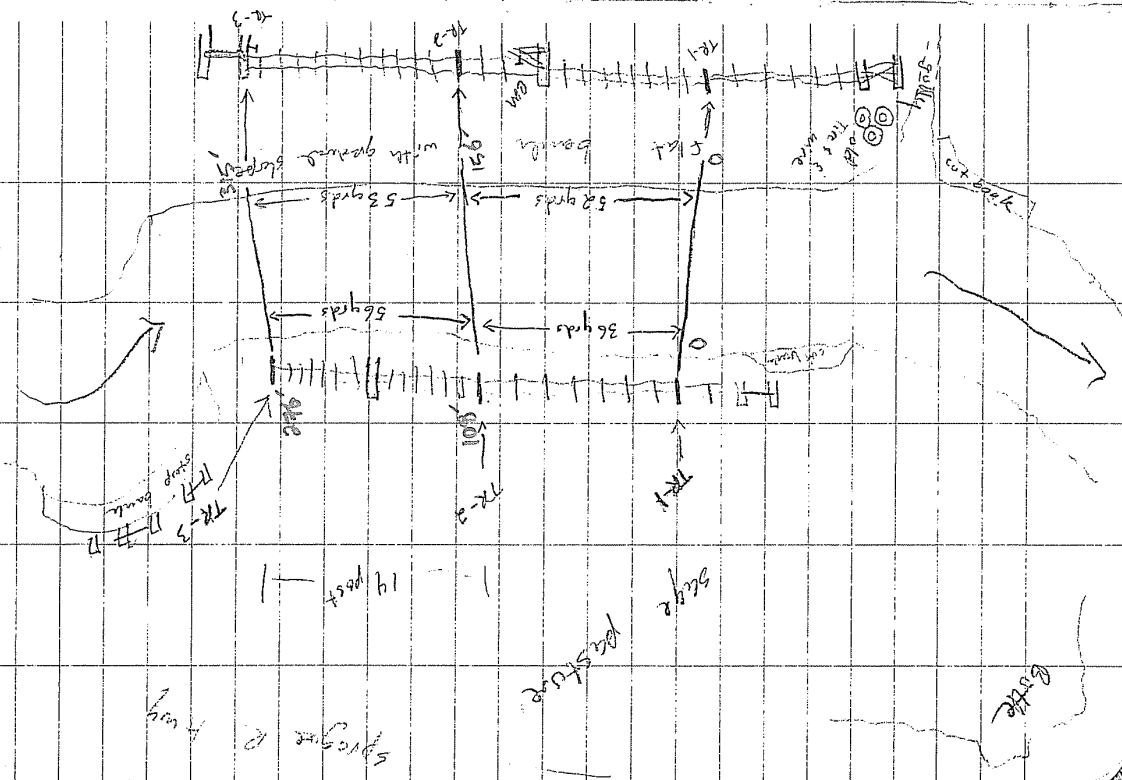
Existing steel fence post used as working pins. Rebar HPs placed on TR-1 & TR-2. Spike/nail used as HP for TR-3 and BMA

* remove orange caps before shooting elevations on TR-1 & 2 HPs *

Level loop SP-5				4/11/04
STA	BS	HT	FS	Eleva
BMA	5.50			100.00
TR-1		105.50	4.68	100.82
TR-2			4.74	100.76
TR-3			3.69	101.81
TR-3	3.59			101.81
TR-2		105.40	4.65	100.75
TR-1			4.59	100.81
BMA			5.41	99.99

SP-5 WSE				04/11/04
STA	BS	HI	FS	Eleva Rad
TR-1		105.40		
LWS			9.95	95.74
RWS			10.05	95.71
TR-2				
LWS			10.15	95.78
RWS			10.29	95.71
TR-3				
LWS			10.03	95.80
RWS			9.98	95.78
BMA			5.41	99.99
BMA			5.41	99.99

SP-5 Site Map 04/11/04



SP-5 Discharge 04/11/04

STA	Depth	Vel.	Notes
2200	0	0	
218	.75	.01	Sol
213	1.05	.13	sol/silt
207	1.07	.39	"
200	1.35	.55	"
193	2.4	1.02	"
186	2.65	.2	"
179	3.2	.11	"
172	3.6	.16	"
165	3.6	.88	"
158	4.15	.83	"
151	3.8	.67	"
144	4.3	.78	"
137	4.5	.55	"
130	4.5	.86	"
123	4.8	.95	"
116	4.8	.93	"
109	4.8	.81	"
102	4.4	.81	"
95	4.4	.55	"
88	4.8	.81	"
81	4.4	.81	"

SP-5		04/11/04	
STA	Depth	Vel	Note
74	4.3	1.09	
		1.98	
67	3.9	.93	
		1.69	
60	3.8	.71	5.11
		1.81	
53	2.60	.57	5.11 + 5.00
		1.11	
50	1	.17	
47	.25	0	
43.7	0	0	