12-4-2009

Ex. 280-US-455

Mike Gagner
R2 Resource Consultants

UKB
1718.01N

DURA-Lite®
WATERPROOF
FIELD
No. 653

Whiskey Cr.
PHABSIM Data
04/22/09

CONTENTS

PAGE	REFERENCE	DATE

Whiskey Cr. 04/22/09

	In	Out
	9,000	6100
S.G	0.0	0.0

NC

Crew: M. Goyne
N. Ramm

Start: N 42.42767 W 121.34244 (399)

old Diversion structure: N 42.42654 W 121.34196 (400)
(u/s ponding)
END

1

Photo Log Habitat 4/22/09

Photo #		
	looking u/s	#1154
	Lt + Rt	1155
	down diversion	1156
	downstream	1157
	u/s from STA 380	#1159
	d/s " " "	#1158
	u/s from STA 55	1160
	d/s " " "	1161
	u/s from old Diversion ponded water	#1162 1163
	d/s of pool	1164
	across valley	1165
	u/s from pool	1166

(2)

04/22/09

STA	Type	Length	Ave width	
0.0	glide	59	6.5'	diversion
59.0				mussels
110			23'	
220	run		23'	Ave D = 1.5
260	glide			gravel
300			18.6	Ave D = 0.9
380	run		15.0	staff gage
415	"		"	
465	riffle		20'	
475				
475	pool		max 2.7	Ave width 25'
510			25'	
530	riffle		16'	
555	pool		15'	Ave width 15'
578	riffle		Ave D = 1.5	
			Ave: 17.7 width	

(3)

Whiskey Cr. Transect Selection

Survey Length = 578' total length

* habitat is very homogeneous with low gradient & sinuous form
* will start with at property boundary and randomly place transects
* Random #s place transects ~ 90' apart to cover the longest portion of the sample reach.

(4)

Whiskey Cr. Level loop

STA	BS	HI	FS	Elevs.
BM	1.76			100.00
		101.76		
TR-1 (HP)			4.24	97.52
TR-2 (HP)			4.78	96.98
TR-3 (HP)			4.66	~~97.11~~ 97.10
TR-4 (HP)			4.04	97.72
TR-5 (HP)			4.51	97.25
TR-6 (HP)			4.79	96.97
FP				
TR-6	5.55			96.97
		102.52		
TR-5			5.27	97.25
TR-4			4.81	97.71
TR-3			5.42	97.10

(5)

Whiskey Cr. 4/22/09

STA	BS	HI	FS	Elevation
		102.52		
TR-2			5.55	96.97
TR-1			5.00	97.52
BM			2.52	100.00

Photo Log

		#	
TR-1	LT → RT	1167	
	u/s	1168	
TR-2	LT → RT	1169	
	u/s	1170	
TR-3	LT → RT	1171	Wrong Trackside (Log)
	u/s	1172	Wrong Trackside
	LT → RT	1173	
	u/s	1174	
TR-4	u/s	1176	
	u/s	1177	
	LT → RT	1178	
TR-5	LT → RT	1179	
	u/s	1180	
TR-6	u/s	1181	
	LT → RT	1182	

6

Whiskey Cr. WSE 04/22/09

STA	BS	HI	FS	Elevation	Rod
TR-1 (HP)	4.29			97.52	
		101.81			
LWS			6.07	95.74	
RWS			6.08	95.73	
TR-2		101.81			
LWS			6.07	95.74	
RWS			6.06	95.75	
TR-3		101.81			
LWS			6.04	95.77	
RWS			6.05	95.76	
TR-4		101.81			
LWS			6.01	95.80	
RWS			6.02	95.79	
BM	2.23	102.23		100.00	
TR-5					
LWS			6.39	95.84	
RWS			6.40	95.83	
TR-6					
LWS			6.14	96.09	
RWS			6.15	96.08	
u/s ~ 104' from TR-6			5.91	96.32	
LWS			5.91	96.32	
RWS					

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swiffer 3602
5B
125

Run/Glide

TR-1 Transect 4/22/09

STA	Depth	Vel	Prim Sub	Sub Sub	%	Cover
LWE 7.6	0.8	0.0	silt	—	100	UCB 0.2'
8.0	1.05	0.17	"	—	100	—
8.75	1.35	0.38		—		
9.30	1.40	0.38		—		
10.0	1.55	0.37		—		
10.7	1.40	0.30		—		
11.4	1.45	0.31		—	100	
12.1	1.55	0.36	silt	Aq Veg	70	
12.8	1.85	0.35	"	"	60	
13.5	1.55	0.44	Aq veg	silt	70	
14.2	2.00	.41	"	"	60	
14.9	1.95	0.44	silt	Aq veg	60	
15.6	2.0	0.33			70	
16.3	2.05	0.25			80	
17.0	2.05	0.40			90	
17.7	2.00	0.34	silt	—	100	
18.4	1.90	0.30		—		
19.1	1.85	0.30		—		
19.8	1.65	0.22		—	100	
20.5	1.40	0.16	silt	aq veg	80	
21.2	1.20	0.13	"	"	60	edge of veg
21.9	out .20	—	veg	silt	80	
22.6	" .10	—	"	"	"	
23.3	out .10	—	"	"	"	

4/22/09

TR-1 Bed profile

STA	BS	HI	FS	Elev	Sub
TR-1 (HP)	4.40				
LWE=2.9			5.06		veg
4.0			5.07		veg
5.0			5.11		veg
6.0			5.25		veg
7.7			5.74		veg
30.1			6.21		veg
36.0			5.73		
42.0			5.54		
RWE=47.[illegible]			5.62		veg

STA 7.6 has 0.2' of UCB

04/22/09

TR-1 Whiskey Cr.

STA	Depth	Vel	Dom	Sub	%	Cover
23.5	0.4	0.0	veg	silt	80	veg
24.2	0.5	0.0	"	"	"	"
24.9	0.35	0.0	"	"	"	"
25.6	0.20	0.0	silt	veg	60	"
26.3	0.20	"	"	"	"	"
26.9	0.25	0.0	"	"	"	"
27.6	0.25	0.0	"	"	"	"
28.3	~~0.25~~	0.0	"	"	"	"
29.0	.10	0.0	"	"	"	"
RWE 30.1	0.0	0.0	"	"	"	"

(10)

04/22/09

Whiskey Cr TR-2 Bank Profile

STA	BS	HI	FS	Elev	Sub.	
TR-2 (HP)	4.94			96.97		
LWP = 3.0			5.63		veg	100
6.0			5.71		veg	100
9.0			5.84		veg	100
LWE = 12.6			6.25		veg/silt	80
RWE = 40.2			6.22		veg/silt	80
41.0			5.95		veg	100
43.0			5.54		"	"
47.0			5.32		"	"
49.0			5.22		veg	100
RWP 54.5			5.18		veg	100

(11)

3602
5B

Whiskey Cr. Run/Glide 04/22/09
TR-2 Transect

STA	Depth	Vel	Dom	Sub	%	Cover
LWE=13.0	0.0	0.0	veg	silt	80	—
13.7	0.15	0.0	"	"	"	
14.4	0.25	0.0				
15.1	0.30					
15.8	.40					
16.5	.50					
17.2	.60					
17.9	0.40					
18.6	.35					
19.2	0.30					
19.9	.30					
20.3	0.0					
20.7	out .15					
21.0	0.0	0.0				—
21.7	1.30	0.0	silt	—	100	
22.4	1.40	0.05				
23.1	1.50	0.05				
23.8	1.70	0.05				
24.5	2.25	0.05				
25.2	2.55	0.05 / 0.0				
25.9	2.75	.09 / .02				
26.6	2.9	.07 / 0.05				
27.3	3.1	.11 / .05				
28.0	3.3	0.31 / .36				

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Whiskey Cr
TR-2 Transect 04/22/09

STA	Depth	Vel	Dom	Sub	Cover
28.8	3.5	.51 / .40	silt	—	—
29.5	3.10	.51 / .26			
30.2	3.15	.58 / .36			
30.9	3.00	.17 / .40			
31.6	2.60	.57 / .18			
32.3	2.5	.51 / 0.29			
33.0	2.0	0.42			
33.7	1.6	0.16			
34.4	1.40	0.11			
35.1	1.40	0.0			
35.8	1.20	0.0			
36.5	1.20	0.0			
37.2	0.30	0.0	veg	silt	70
37.9	0.2	0.0	"	"	70
38.5	0.1	0.0	"	"	70
RWE=39.0	0.0	0.0	"	"	80

(13)

Whiskey Cr.
TR-3 Transect 04/22/09

STA	Depth	Vel	Dom	Sub	% Cover
28.5	0.50	0.05	Ag Veg (70%)	/Silt	
30.0	0.50	0.00	Ag Veg (70%)	/Silt	
31.5	0.80	0.05	Silt (80%)	/Ag Veg	
33.5	0.65	0.05	Silt (80%)	/Ag. Veg	
35.5	0.60	0.05	Silt 70%	/Ag Veg	
38.0	0.35	0.00	Ag Veg (60%)	/Silt	
41.0	0.20	0.00	Ag. Veg 60%	/Silt	
Rvr 42.7	0.0	0.0	Silt (100%)		

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Whiskey Cr Run/Glide
TR-3

Meter #3602
Prop 5B/125cal 04/22/09
TR-3 Continue

STA	Depth	Vel	Dom	Sub	%	Cover
9.0	0.0	0.0	Veg	/Silt	(70%)	
9.2	2.65	0.50/0.50	OVC			(overhead cover)
9.9	2.05	0.48	Silt		(100%)	/OVC
10.5	2.40	0.69	Silt		(100%)	
11.0	2.35	0.79	Silt		(100%)	
11.5	2.40	0.84	Silt		(90%)	/Ag Veg
12.0	2.38	0.59	Silt		(80%)	/Ag. Veg
12.5	2.15	0.52	Silt		(70%)	/Ag. Veg
13.0	1.77	0.59	Silt		(70%)	/Ag Veg
13.5	1.90	0.84	Silt		(70%)	/Ag Veg
14.0	1.80	0.32	Silt		(70%)	/Ag. Veg
14.5	1.65	0.22	Silt		(70%)	/Ag Veg
15.0	1.50	0.34	Silt		(80%)	/Ag. Veg
15.5	1.50	0.34	Silt		(70%)	/Ag Veg
16.0	1.38	0.34	Silt		(80%)	/Ag. Veg
16.5	1.20	0.33	Silt		(90%)	/Ag Veg
17.0	0.95	0.30	Silt		(70%)	/Ag Veg
17.5	0.90	0.18	Silt		(70%)	/Ag. Veg
18.0	0.90	0.05	Silt		(90%)	/Ag. Veg
18.5	0.35	0.0	Ag Veg		(70%)	/Silt
19.5	0.20	0.0	Ag Veg		(70%)	/Silt
21.0	0.0	0.0	Silt		(60%)	/Ag Veg
24.0	0.35	0.0	Ag Veg		(90%)	/Silt
26.0	0.35	0.0	Silt		(70%)	/Ag Veg
27.5	0.35	0.05	Silt		(70%)	/Ag Veg

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TR-3 Bank Profile 04/22/09

STA	BS	HI	FS	Elevation	Substrate
TR-3 (HP)	4.82			97.10	
TR-3 wp 3.0			5.37		veg 100
6.0			5.44		" "
8.0			5.67		" "
LWE = 9.0			6.05		" silt 60
RWE = 43.0			6.22		veg silt 70
52.0			5.88		veg 100
66.0			5.52		
RWP = 79.3			5.42		
* d/s TR-1 ~ 90'			6.21		

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TR-4 Bank Survey 04/22/09

STA	BS	HI	FS	Elevation	Substrate
TR-4 (HP)	4.21				
LWP = 3.0			4.99		veg 100
5.5			5.11		" "
6.7			5.16		" "
LWE = 7.3			6.11		
RWE = 30.4			6.19		silt/veg 70
37.7			5.94		veg 100
48.0			5.54		
56.0			5.72		
RWP = 63.8			5.42		

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Run/Cycle TR-4 Transect 04/22/09

STA	Depth	Vel	Dom	Sub	%	Cover
7.3 Lwe	0.0	0.0	Silt (80%) / Veg			ucb (0.30)
7.4	1.50	0.55	Silt (80%) / Sand			
8.0	1.40	0.85	"	"		
8.5	1.50	0.90	Silt (90%) / Sand			
9.0	1.50	0.89	"	"		
9.5	1.50	0.63	Silt (80%) / Sand			
10.0	1.50	0.89	"	"		
10.5	1.40	1.04	"	"		
11.0	1.30	0.90	"	"		
11.5	1.30	0.82	Silt (90%) / Sand			
12.0	1.45	0.54	"	"		
12.5	1.05	0.37	Silt (80%) / Ag Veg			
13.0	0.67	0.63	Ag Veg (70%) / Silt			
13.5	0.55	0.65	Ag Veg (70%) / Silt			
14.0	0.50	0.27	Silt (60%) / Ag Veg			
14.5	0.40	0.13	Silt (80%) / Ag Veg			
15.0	0.50	0.10	"	"		
16.0	0.50	0.10	"	"		
17.0	0.30	0.10	"	"		
18.0	0.30	0.00	"	"		
19.0	0.30	0.10	"	"		
20.0	0.25	0.05	"	"		
21.0	0.25	0.05	"	"		
23.0	0.40	0.05	Ag Veg 60%/Silt			

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TR-4 Transect 4/22/09

STA	Depth	Vel	Sub %
25.0	0.20	0.0	Veg (60%) / Silt
27.0	0.15	0.0	" "
29.0	0.10	0.0	" "
30.4	0.0	0.0	" "

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Run [illegible]

TR-5 Transect 04/22/09

STA	Depth	Vel	Dom	Sub	% Cover
11.2 LWE	0.0	0.0	Veg (70%)	/ Silt	
12.0	0.15	0.0	"	"	
13.0	0.45	0.05 (est)	Silt (60%)	/ Ag Veg	
14.0	0.45	"	"	"	
15.0	0.40	0.0	Ag Veg (80%)	/ Silt	
16.0	0.80	0.05	"	"	
17.0	0.30	0.05	Ag Veg (70%)	/ Silt	
17.5	1.38	0.45	Silt (60%)	/ Sm gravel	
18.0	1.30	0.49	Smg (60%)	/ Sand	
18.5	1.45	1.05	"	"	
19.0	1.35	1.03	Smg (70%)	/ Sand	
19.5	1.25	1.20	"	"	
20.0	1.25	0.87	"	"	
20.5	1.20	0.62	Smg (80%)	/ Sand	
21.0	1.15	0.55	"	"	
21.5	1.25	0.84	"	"	
22.0	1.20	1.09	Smg (60%)	/ Sand	
22.5	1.00	1.23	"	"	
23.0	1.05	1.30	Ag Veg (70%)	/ Sand	
23.5	1.10	0.88	Ag Veg (60%)	/ Sand	Veg
23.7	1.15	0.79	"	"	"
24.0 RWE	0.20	0.0	Veg (90%)	/ Silt	

TR-6 Transect 4/22/09

STA	Depth	Vel	Dom	Sub	% Cover

TR-5

04/22/09

STA	BS	HI	FS	Elevation	Sub
TR-5 (HP)	4.56			97.25	
LWP=3.0			5.40		veg 100
6.0			5.59		" "
8.5			5.78		" "
BB.0			6.02		" /silt 90
LWE=11.2			6.06		
RWE=24.2			6.02		veg/silt 80
28.0			6.00		" 80
33.0			5.99		veg 100
34.7			5.76		veg 100
39.0			5.41		"
43.0			5.22		"
RWP=47.2		—	5.30		"

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TR-6 Bank Profile

04/22/09

STA	BS	HI	FS	Elevation	Sub
TR-6 (HP)	4.84	101.81		96.97	
LWP=3.0			5.13		veg 100
6.0			5.38		" "
10.0			5.51		" "
LWE=11.4			5.88		(90) aq veg/silt
RWE=27.2			5.75		(80) aq veg/silt
29.0			5.54		" " "
33.0			5.57		" " "
42.0			5.59		(90) " "
RWP=48.0			5.07		veg 100
WSE Check =			5.80	96.01	

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TR-6 Transect 04/22/09

For 15th

STA	Depth	Vel	Dom Sub %	Cov
11.4 LWE	0.0	0.0	Veg (70%)/Silt	
12.5	0.45	0.10	Silt (80%)/Ag Veg	
13.5	0.90	0.15	" "	
13.8	0.0	0.0	edge of grassclump	
14.3	-0.40	0.0	Veg (100%)	
14.9	0.0	0.0	edge of grass clump	
15.5	0.20	0.0	Veg (60%)/Silt	
16.0	0.70	0.10 (est)	" "	
16.5	0.80	0.29	Veg (70%)/Silt	
17.0	1.15	0.27	Silt (70%)/Smg	
17.5	1.10	1.56	Smg (60%)/Sand	
18.0	1.00	1.67	" "	
18.5	0.80	1.37	Ag Veg (60%)/Smg	
19.0	0.80	1.33	" "	
19.5	1.05	1.00	Smg (70%)/Sand	
20.0	1.05	0.82	" "	
20.5	0.70	1.29	Veg (70%)/Smg	
21.0	0.80	1.33	Smg (60%)/Veg	
21.5	0.80	1.58	" "	
22.0	0.85	1.61	" "	
22.5	0.75	1.32	" "	
23.0	0.60	0.33	Veg (60%)/Silt	
23.5	0.50	0.10 (est)	Veg (90%)/Silt	
24.5	0.40	0.05 (est)	" "	

TR-6 Transect 04/22/09

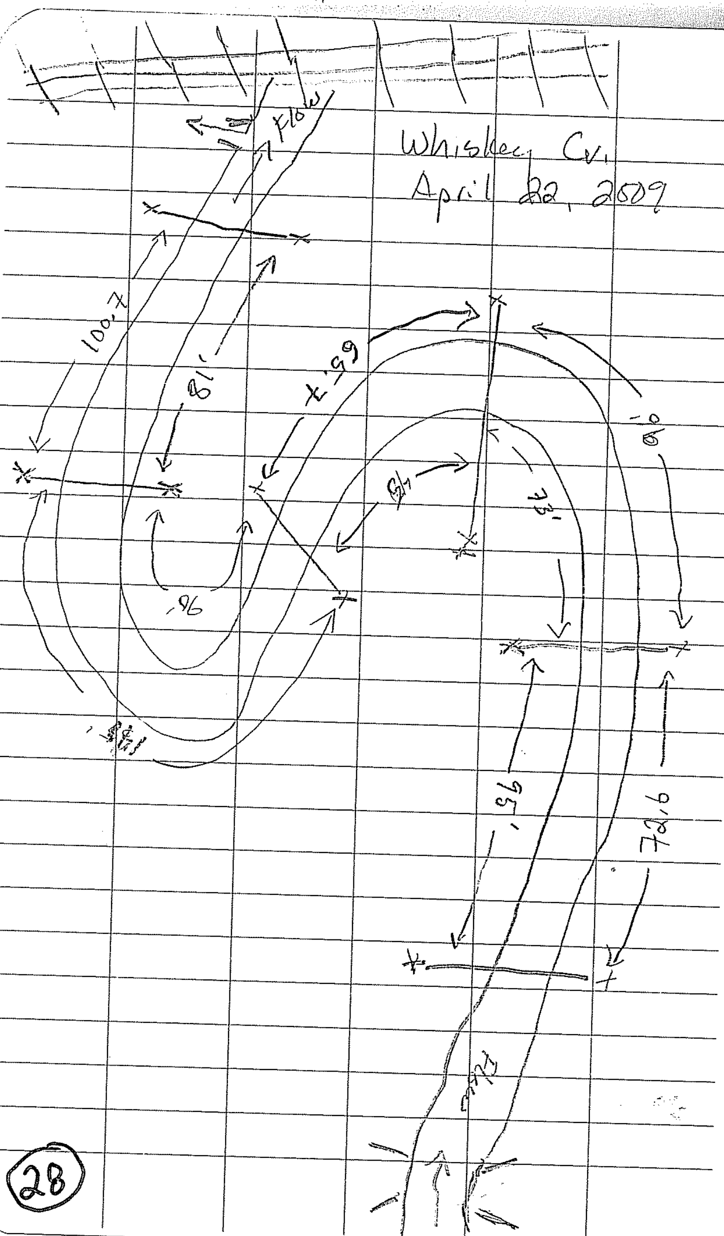
STA	DEP	Vel	Dom Sub %
25.5	0.20	0.05	Silt (60%)/Veg
26.5	0.10	0.05	" "
27.2 RWE	0.0	0.0	Silt (70%)/Veg

Whisler Cr. Transect

GPS Coordinates (Left Bank - looking u/s)

			NAD 83
TR-1	N -	42.42744	401
	W -	121.34249	
TR-2	N -	42.42725	402
	W -	121.34268	
TR-3	N -	42.42718	403
	W -	121.34261	
TR-4	N	42.42722	404
	W	121.34238	
TR-5	N	42.42704	405
	W	121.34213	
TR-6	N	42.42686	406
	W	121.34208	

Whiskey Cr.
April 22, 2009



Whiskey Cr Diversion Channels

Diversion Channel

#1 408 - N 42.42680
W 121.34260

~7' wide, ~1.0' deep, w/ no vel

#2 (1.1(d), vel .70) (1.0(d), 0.86 v) (0.7(d), 0.58)
width ~4' 1183 photo

409 - N 42.42714
W 121.34449