

12-4-2009

Ex. 280-US-438

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Stream: Sprague River
Site: 645
Date: 4/10/2004
Habitat: Run / Glide

Flow: High

(1) Level Loop Survey (BM & HP)

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.50	105.50		100.00
HP1			4.68	100.82
HP2			4.74	100.76
HP3			3.69	101.81
TP				
HP3	3.59	105.40		100.75
HP2			4.65	100.75
HP1			4.59	100.81
BM			5.41	99.99

Comment:

Date: 6/26/2004
Habitat: Run / Glide

Flow: Mid

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.39	105.39		100.00
HP3			3.61	101.78
HP2			4.59	100.80
HP1			4.68	100.71
TP				
HP1	4.09	104.80		100.80
HP2			4.00	100.80
HP3			3.02	101.78
BM			4.80	100.00

Comment:

Date: 8/17/2004
Habitat: Run / Glide

Flow: Low

(1) Level Loop Survey

BM/HP (ft)	BS (ft)	HI (ft)	FS (ft)	Elev (ft)
BM	5.32	105.32		100.00
HP1			4.50	100.82
HP2			4.54	100.78
HP3			3.50	101.82
TP				
HP3	3.47	105.29		100.78
HP2			4.51	100.78
HP1			4.47	100.82
BM			5.29	100.00

Comment:

(2) Water Surface Elevation (WSE) Survey

TR	Station		FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)	
	L/R bank (ft)	Ave (ft)						
1-L	0	0	105.40	9.95	0.29	95.74	882.3	
1-R	0	0	105.40	10.05	0.36	95.71		
2-L	156	132	105.40	10.15	0.53	95.78	95.76	
2-R	108	108	105.40	10.29	0.63	95.74		
3-L	315	296	105.40	10.03	0.43	95.80	95.79	
3-R	276	276	105.40	9.98	0.36	95.78		
							Ave Q=	882.3

Note: WSE slope = 0.022%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 0068
 Propeller ID: na

(2) Water Surface Elevation (WSE) Survey

TR	Station		FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)	
	L/R bank (ft)	Ave (ft)						
1-L	0	0	104.80	11.49	1.33	94.64	189.2	
1-R	0	0	104.80	12.12	1.91	94.59		
2-L	156	132	104.80	11.30	1.33	94.83	94.76	
2-R	108	108	104.80	10.92	0.80	94.68	207.4	
3-L	315	296	104.80	11.81	1.79	94.78	94.75	
3-R	276	276	104.80	11.53	1.45	94.72	188.7	
							Ave Q=	195.1

Note: WSE slope = 0.046%

(3) Meter and propeller ID for Velocity Correction

Meter ID: 0068
 Propeller ID: na

(2) Water Surface Elevation (WSE) Survey

TR	Station		FS (ft)	Rod (ft)	WSE (ft)	Ave WSE (ft)	Q (cfs)	
	L/R bank (ft)	Ave (ft)						
1-L	0	0	105.29	11.23	0.00	94.06	94.05	
1-R	0	0	105.29	11.25	0.00	94.04	124.9	
2-L	156	132	105.29	11.07	0.00	94.22	94.18	
2-R	108	108	105.29	11.15	0.00	94.14	105.4	
3-L	315	296	105.29	11.03	0.00	94.26	94.25	
3-R	276	276	105.29	11.05	0.00	94.24	132.1	
							Ave Q=	120.8

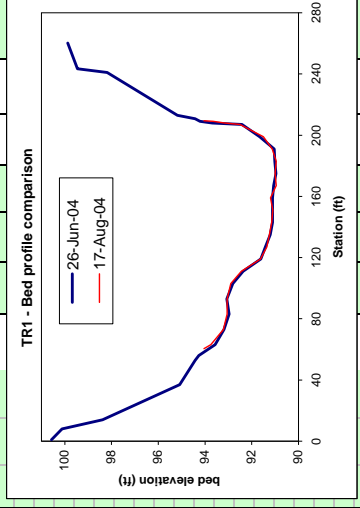
Note: WSE slope = 0.068%

(3) Meter and propeller ID for Velocity Correction

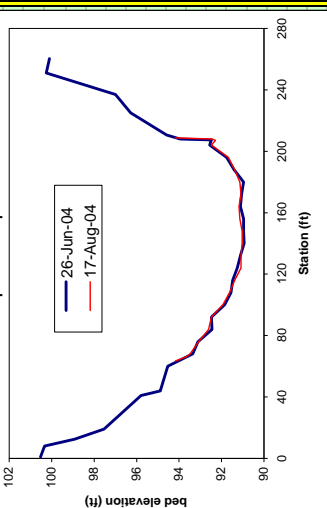
Meter ID: 0068
 Propeller ID: na

Stream: Sprague River	10-Apr-04										26-Jun-04										17-Aug-04									
	Site (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.5m} (ft/s)	Ave (ft/s)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.5m} (ft/s)	Ave (ft/s)	q (cfs)	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	V _{0.2m/s} (ft/s)	V _{0.5m} (ft/s)	Ave (ft/s)	q (cfs)	substrate			
	43.7	95.73	0.00	0.00	0.00	0.00	0.00	0.00		LWP 1.0	4.23	100.57						1.2												
	47.0	95.48	0.25	0.00	0.00	0.01	0.00	0.00			4.68	100.12						1.2												
	50.0	94.73	1.00	0.17	0.24	0.24	0.72	0.00		14.0	6.42	98.38						1.2												
	53.0	93.13	2.60	0.57	1.11	0.99	12.81	0.00		37.0	9.71	95.09						1.2												
	60.0	91.93	3.80	0.74	1.81	1.48	39.37	0.00		56.0	10.38	94.22	0.00	0.00	0.00	0.00	0.00	1.2												
	67.0	91.83	3.90	0.87	1.69	1.48	40.51	0.00		63.0	9.37	93.57	0.35	0.00	0.01	0.00	0.00	1.2												
	74.0	91.43	4.30	1.09	1.98	1.77	53.38	0.00		73.0	9.37	93.19	1.05	0.00	0.01	0.00	0.00	1.2												
	81.0	91.13	4.60	1.86	0.80	1.54	49.64	0.00		83.0	9.37	92.97	1.43	0.17	0.24	3.45	2.4	2.4												
	88.0	90.93	4.80	2.13	1.28	1.97	66.10	0.00		103.0	9.37	92.82	1.55	0.08	0.11	1.77	2.4	2.4												
	95.0	91.13	4.60	0.55	1.98	1.47	47.30	0.00		103.0	9.37	92.82	1.80	0.07	0.11	1.77	2.4	2.4												
	102.0	91.13	4.60	1.21	2.07	1.89	60.96	0.00		111.0	9.37	92.37	2.25	0.61	0.73	13.07	2.4	2.4												
	109.0	90.93	4.80	1.32	1.37	1.56	52.39	0.00		111.0	9.37	92.37	2.25	0.61	0.73	13.07	2.4	2.4												
	116.0	90.93	4.80	1.36	1.77	1.81	60.80	0.00		119.0	9.37	91.62	3.00	0.19	0.07	0.19	4.50	4.3	4.3											
	123.0	90.93	4.80	1.25	1.73	1.72	57.93	0.00		127.0	9.37	91.42	3.20	0.15	0.76	0.56	14.25	4.3	4.3											
	130.0	91.23	4.50	0.98	1.65	1.52	48.00	0.00		135.0	9.37	91.22	3.40	1.06	0.03	0.64	17.40	4.3	4.3											
	137.0	91.23	4.50	1.55	1.72	1.89	59.52	0.00		143.0	9.37	91.12	3.50	0.13	0.19	0.23	6.45	5.3	5.3											
	144.0	91.43	4.30	0.78	1.46	1.30	39.24	0.00		151.0	9.37	91.12	3.50	0.63	0.03	0.40	11.14	3.2	3.2											
	151.0	91.93	3.80	0.67	1.33	1.17	31.07	0.00		159.0	9.37	91.02	3.50	0.09	1.11	0.72	20.03	3.2	3.2											
	158.0	91.58	4.15	0.83	1.65	1.44	41.82	0.00		167.0	9.37	91.07	3.55	0.78	0.40	0.71	20.07	2.3	2.3											
	165.0	92.13	3.60	0.88	1.58	1.43	35.96	0.00		175.0	9.37	90.97	3.65	0.83	0.17	0.61	17.72	4.3	4.3											
	172.0	92.13	3.60	0.11	1.26	0.83	21.04	0.00		183.0	9.37	91.02	3.60	0.46	0.81	0.76	21.76	2.4	2.4											
	186.0	93.08	2.65	0.20	1.14	0.80	14.86	0.00		191.0	9.37	91.04	3.58	0.87	0.17	0.63	18.01	2.4	2.4											
	193.0	93.33	2.40	1.02	1.19	1.19	19.94	0.00		199.0	9.37	91.67	2.95	0.01	0.42	0.27	6.30	2.3	2.3											
	200.0	94.38	1.35	0.55	0.66	0.62	2.22	0.00		207.0	9.37	92.42	2.20	0.93	1.08	10.72	2.1	2.1												
	207.0	94.66	1.07	0.39	0.49	0.49	3.38	0.00		209.0	9.37	92.42	2.20	0.93	1.08	10.72	2.1	2.1												
	213.0	94.68	1.05	0.13	0.70	1.13	0.00	0.00		RWE 210.7	10.37	94.43	0.00	-0.04	-0.06	-0.03	0.00	1.2	1.2											
	218.0	94.98	0.75	-0.01	-0.02	-0.04	0.00	0.00		213.0	9.62	95.18	0.00	0.00	0.00	0.00	0.00	1.2	1.2											
	220.0	95.73	0.00	0.00	0.00	0.00	0.00	0.00		243.5	5.34	99.46						2.1	2.1											
										RWP 260.2	4.92	99.88						2.1	2.1											

This (4/10/04) is a Discharge Flow Transect.
 ***** Not TR1 *****



Stream: Sprague River	Site: 645	10-Apr-04						26-Jun-04						17-Aug-04												
		Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.206}	q (cfs) Ave	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.206}	q (cfs) Ave	substrate	Sta (ft)	FS (ft)	Ground (ft)	Depth (ft)	Vel (ft/s) V _{0.206}	q (cfs) Ave	substrate				
LWP	1.0	4.27	100.53																							
	8.0	4.46	100.34				1.1																			
	12.5	5.89	98.91				2.1																			
	19.0	7.26	97.54				1.2																			
	41.0	9.01	95.79				1.2																			
LWE	44.0	9.91	94.89	0.00	0.00		0.00																			
	52.0	94.71	0.05	0.00	0.00	0.01	0.00	1.2																		
	60.0	94.54	0.22	0.00	0.00	0.01	0.00	1.2																		
	68.0	93.36	1.40	0.05	0.08	0.08	0.87	1.2																		
	76.0	93.12	1.64	0.16	0.23	3.02	1.2																			
	84.0	92.46	2.30	0.18	0.25	4.67	1.2																			
	92.0	92.48	2.28	0.36	0.45	8.25	2.4																			
	100.0	91.86	2.90	0.00	0.47	0.29	6.63	4.3																		
	108.0	91.56	3.20	0.00	0.62	0.37	9.44	4.3																		
	116.0	91.48	3.28	0.15	0.06	0.16	4.10	4.3																		
	124.0	91.26	3.50	0.65	0.06	0.43	12.11	4.3																		
	132.0	91.11	3.65	0.08	0.67	0.46	13.42	4.3																		
	140.0	90.94	3.82	0.66	0.13	0.49	14.94	4.3																		
	148.0	90.96	3.80	0.13	0.65	0.48	14.69	4.3																		
	156.0	90.96	3.80	1.06	0.48	0.91	27.58	4.3																		
	164.0	91.11	3.65	0.10	0.49	0.37	10.92	4.2																		
	172.0	91.06	3.70	0.87	0.27	0.69	20.28	4.2																		
	180.0	90.96	3.80	0.30	0.73	0.62	18.93	2.4																		
	188.0	91.41	3.35	0.91	0.04	0.56	15.04	2.4																		
	196.0	91.76	3.00	0.55	0.99	0.91	21.72	2.4																		
	204.0	92.56	2.20	0.03	0.05	0.05	0.59	2.4																		
	207.5	92.48	2.28	0.02	0.03	0.03	0.14	2.1																		
	208.0	93.96	0.80	0.01	0.02	0.02	0.02	1.2																		
	RWE	210.7	10.22	94.58	0.00	0.00	0.00	2.1																		
		225.0	8.52	96.28				1.2																		
		237.0	7.81	96.99				1.2																		
		251.0	4.54	100.26				1.2																		
		260.2	4.70	100.10				1.2																		
		RWP	260.3	4.70	100.10			1.2																		



Sprague River SP-5 06/27/04

Run/Glide	MID		TRANSECT 1										
IOC	1101100100001000101000												
QARD	80.0												
QARD	100.0												
QARD	120.8												
QARD	140.0												
QARD	160.0												
QARD	180.0												
QARD	195.1												
QARD	200.0												
QARD	220.0												
QARD	240.0												
QARD	260.0												
QARD	280.0												
QARD	300.0												
QARD	320.0												
QARD	340.0												
QARD	360.0												
QARD	380.0												
QARD	400.0												
QARD	420.0												
QARD	440.0												
QARD	460.0												
QARD	480.0												
QARD	500.0												
QARD	550.0												
QARD	600.0												
QARD	650.0												
QARD	700.0												
QARD	750.0												
QARD	800.0												
QARD	882.3												
XSEC	0.0	0.0	1.0	90.97	0.00046								
	0.0	1.0100.6	8.0100.1	14.0	98.4	37.0	95.1	52.8	94.4	56.0	94.3		
	0.0	63.0	93.6	73.0	93.2	83.0	93.0	93.0	93.1103.0	92.8111.0	92.4		
	0.0119.0	91.6127.0	91.4135.0	91.2143.0	91.1151.0	91.1159.0	91.1						
	0.0167.0	91.1175.0	91.0183.0	91.0191.0	91.0199.0	91.7207.0	92.4						
	0.0208.0	93.7209.0	94.2210.7	94.4213.0	95.2241.0	98.2243.5	99.5						
	0.0260.2	99.9											
NS	0.0	1.2	1.2	1.2	1.2	1.2	0.4	1.2					
NS	0.0	0.5	2.1	2.4	0.4	2.4	2.4	2.4	2.4				
NS	0.0	0.20	4.3	4.3	4.3	0.25	5.3	3.2	3.2				
NS	0.0	2.3	4.3	2.4	2.4	0.18	2.3	.065	2.1				
NS	0.0	0.1	2.1	0.2	1.2	1.2	1.2	2.1	2.1				
NS	0.0	2.1											
WSL	0.0	93.83	93.95	94.05	94.14	94.24	94.34						
WSL	0.0	94.41	94.43	94.51	94.58	94.64	94.71						
WSL	0.0	94.77	94.82	94.87	94.93	94.98	95.02						
WSL	0.0	95.07	95.11	95.14	95.18	95.21	95.29						
WSL	0.0	95.37	95.44	95.51	95.57	95.63	95.73						
CAL1	0.0	94.62	195.1										
VEL1	0.0	0.00 0.01 0.01 0.24-0.02 0.12 0.11 0.73											
VEL1	0.0	0.19	0.56	0.64	0.23	0.40	0.72	0.71	0.61	0.76	0.63	0.27	1.08
VEL1	0.0	0.98-0.06	0.00										
CAL2	0.0	95.73	882.3										
VEL2	0.0												
VEL2	0.0												
VEL2	0.0												
CAL3	0.0	94.05	120.8										
VEL3	0.0												
VEL3	0.0												
VEL3	0.0												
ENDJ													

Sprague River SP_5 06/27/04

Run/Glide	MID		TRANSECT 2									
IOC	1100000100001000101000											
QARD	80.0											
QARD	100.0											
QARD	120.8											
QARD	140.0											
QARD	160.0											
QARD	180.0											
QARD	195.1											
QARD	200.0											
QARD	220.0											
QARD	240.0											
QARD	260.0											
QARD	280.0											
QARD	300.0											
QARD	320.0											
QARD	340.0											
QARD	360.0											
QARD	380.0											
QARD	400.0											
QARD	420.0											
QARD	440.0											
QARD	460.0											
QARD	480.0											
QARD	500.0											
QARD	550.0											
QARD	600.0											
QARD	650.0											
QARD	700.0											
QARD	750.0											
QARD	800.0											
QARD	882.3											
XSEC	0.0	0.0	1.0	90.97	0.000457							
	0.0	1.0100.5	8.0100.3	12.5	98.9	19.0	97.5	41.0	95.8	44.0	94.9	
	0.0	52.0	94.7	60.0	94.5	68.0	93.4	76.0	93.1	84.0	92.5	
	0.0	0.0100.0	91.9108.0	91.6116.0	91.5124.0	91.3132.0	92.1140.0	90.9				
	0.0	0.0148.0	91.0156.0	91.0164.0	91.1172.0	91.1180.0	91.0188.0	91.4				
	0.0	0.0196.0	91.8204.0	92.6207.5	92.5208.0	94.0210.7	94.6225.0	96.3				
	0.0	0.0237.0	97.0251.0	100.3260.2	100.1260.3	100.1						
NS	0.0	1.1	1.1	1.1	2.1	1.2	1.2	1.2	1.2	1.2	1.2	
NS	0.0	0.2	1.2	0.2	1.2	0.2	1.2	1.2	1.2	1.2	2.4	
NS	0.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	
NS	0.0	4.3	.095	4.3	4.3	4.3	4.2	2.4	2.4	2.4	2.4	
NS	0.0	.085	2.4	0.4	2.4	0.45	2.1	0.5	1.2	2.1	1.2	
NS	0.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
WSL	0.0	94.00	94.10	94.10	94.18	94.26	94.34	94.43	94.43	94.43	94.43	
WSL	0.0	94.50	94.51	94.51	94.59	94.65	94.71	94.77	94.77	94.77	94.77	
WSL	0.0	94.83	94.88	94.88	94.92	94.98	95.03	95.07	95.07	95.07	95.07	
WSL	0.0	95.12	95.15	95.15	95.18	95.22	95.25	95.33	95.33	95.33	95.33	
WSL	0.0	95.41	95.47	95.47	95.54	95.60	95.66	95.76	95.76	95.76	95.76	
CAL1	0.0	94.76	195.1									
VEL1	0.0				0.00	0.01	0.01	0.08	0.23	0.25	0.45	
VEL1	0.0	0.29	0.37	0.16	0.43	0.46	0.49	0.48	0.91	0.37	0.69	
VEL1	0.0	0.91	0.05	0.03	0.02	0.00						
CAL2	0.0	95.76	882.3									
VEL2	0.0											
VEL2	0.0											
VEL2	0.0											
CAL3	0.0	94.18	120.8									
VEL3	0.0											
VEL3	0.0											
VEL3	0.0											
ENDJ												

Sprague River SP_5 06/27/04

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Run/Glide          MID          TRANSECT 3
IOC      1100000100001000101000
QARD  80.0
QARD 100.0
QARD 120.8
QARD 140.0
QARD 160.0
QARD 180.0
QARD 195.1
QARD 200.0
QARD 220.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 320.0
QARD 340.0
QARD 360.0
QARD 380.0
QARD 400.0
QARD 420.0
QARD 440.0
QARD 460.0
QARD 480.0
QARD 500.0
QARD 550.0
QARD 600.0
QARD 650.0
QARD 700.0
QARD 750.0
QARD 800.0
QARD 882.3
XSEC  0.0      0.0 1.0      90.97  0.00046
      0.0  4.0101.3 12.8100.5 20.4 98.0 44.4 95.1 55.0 94.7 60.0 94.2
      0.0 67.0 93.0 75.0 92.2 83.0 91.5 91.0 91.2 99.0 90.8107.0 90.3
      0.0115.0 90.4123.0 90.6131.0 90.2139.0 90.2147.0 89.7155.0 89.7
      0.0163.0 89.7171.0 90.0179.0 90.4187.0 90.7195.0 93.6198.0 94.2
      0.0199.3 94.6210.0 96.0225.5 97.4235.5 99.9246.0100.5
NS  0.0      2.1      2.1      1.2      1.2      1.2      1.2
NS  0.0      3.4      2.4 0.3  2.3 0.5  2.3 0.5  2.3 0.5  2.3
NS  0.0 0.5  2.3 0.5  2.3 0.5  2.3      4.3      4.3      4.3
NS  0.0      4.3      4.3      4.3 0.5  2.3      2.1 0.5  1.2
NS  0.0      1.2      2.1      2.1      2.1      2.1
WSL 0.0      94.09      94.18      94.26      94.33      94.41      94.50
WSL 0.0      94.56      94.57      94.64      94.71      94.76      94.82
WSL 0.0      94.88      94.92      94.97      95.02      95.07      95.11
WSL 0.0      95.15      95.19      95.22      95.26      95.29      95.36
WSL 0.0      95.44      95.50      95.57      95.63      95.69      95.79
CAL1 0.0      94.75      195.1
VEL1 0.0      0.00 0.01-0.05 0.64 0.59 0.13 0.02 0.01 0.01
VEL1 0.0 0.01 0.02 0.01 0.30 0.79 0.71 1.05 0.94 0.34 0.09 0.09 0.01
VEL1 0.0 0.00
CAL2 0.0      95.79      882.3
VEL2 0.0
VEL2 0.0
VEL2 0.0
CAL3 0.0      94.25      120.8
VEL3 0.0
VEL3 0.0
VEL3 0.0
ENDJ

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