

APPENDIX G

Field Notes

1628.02.1002
Sultan R.

Reach 3 Upper



"Return to the Rain"

ALL-WEATHER
LEVEL BOOK

No. 310 F

Sno Pvd

Jackson Project

1628.02

Sutton R. Reach 3 upper

June 27, 07

	In	Out
Time	8:00	6:00
S.G	4 ³ / ₁₆	4 ³ / ₁₆

Crew: M. Goggin
T. Sullivan

Equipment: Level Zeiss N. 40
Swafter: ~~4441~~ 3602
prop #: 5A
cal: 2.175

Sutton R. Reach 3 upper

June 27, 07

TR- 6 Level Loop

STA BS HI FS Elevation

BM	2.40			100.00
		102.40		
(bot) HP-1			4.62	97.79
HP-2 (center)			4.26	98.14
(TP) HP-2	4.48			98.14
		102.62		
HP-1			4.84	97.78 97.78
BM			2.63	99.99

TR-6 RIFFLE

6/27/07

Sulphur R. Reach 3 Upper 1

Bank profile S. WSE

STA	BS	HT	FS	Eleva	Red
H.P. 1	4.85	102.63		97.78	
1.0 LWP			5.65		
1.6			5.76		
3.0			6.41		
3.4			6.56		
3.9			8.16		
8.0			8.86		
12.7			9.56		
15.9			10.09		
RWE 17.0	(firsting w/s)		10.50	92.21	0.08
RWE 49.6	(lasting w/s)		10.80	92.16	0.03
57.5			9.50		
59.8			8.84		
64.4			8.52		
67.9			7.35		
70.3			6.71		
71.1			6.24		
73.7 RWP			5.58		
" 79.7			3.94		
-4.0			2.40		
v/s 56'			12.14		1.65

TR-6 cont'd

Substrate		% Dom	Cover
Dist	Sub		
bedrock	med grav	90	
"	"	"	
"	"	"	
"	"	"	sm gr < 0.5
"	"	70	med gr 2.5 - 1.5
sm gr	med gra	60	lg gr 1.5 - 3.0
"	"	"	sm cob 3.0 - 12.0
med gra	lg grav	70	lg cob 3.0 - 12.0
sm cob	lg cob	60	bed > 12.0
lg cob	med cob	60	
sand	lg cob	70	
"	"	90	
"	"	"	
"	"	80	
bed cob.	lg cob	60	
bed cob.	lg grav	60	
"	"	60	
lg grav	sand	60	
sand	lg gr	80	
bed	sh	95	

27, 07

STA	Depth	Vel	Down	Sub	% Down
RWE. 50.6	0.0	0.0	sm cob	Lg gr	60
49.6	0.05	0.50	"	Lg cobb	70
49.0	0.35	1.07	sm cob	"	70
48.0	0.15	0.04	"	"	60
47.0	0.70	1.60	"	Lg' grow	70
45.5	0.90	2.07	"	"	60
44.0	1.02	2.33	"	"	60
43.0	1.05	2.03	"	"	60
41.5	0.85	2.10	"	Lg cobb	60
40.3	1.52	1.58	"	"	70
39.0	1.45	2.12	"	Lg gr.	70
37.5	1.45	1.85	sm cob	"	80
36.0	1.00	1.35	"	Lg cobb	70
35.0	1.05	1.39	"	"	70
33.5	1.05	1.15	"	Lg gr.	60
32.0	1.00	1.57	"	Lg cobb	80
30.5	0.5	2.00	"	Lg gr.	60
29.0	0.3	2.14	bid	"	60
27.5	0.37	1.14	Lg gr.	sm cobb	70
26.0	0.25	1.25	Lg gr	sm cob	80
24.5	0.25	0.60	sm cob	Lg cobb	60
22.5	0.20	0.17	Lg gr.	sm cobb	60
20.2	0.12	0.03	sm cob	Lg gr.	60
18.5	0.25	0.05	"	"	70
17.0	0.0	0.0	bid	Lg gr.	60

June 27 07

Cover	Comments
u/s vel break	
Top 511	
small u/s vel break	
u/s vel break	
15° angle	
30° "	
15° angle	

Station R. Reach 3 upper

TR-5 pool Level Loop 6/27/07

STA	BS	HI	FS	Eleva
BM	8.63			100.00
		108.63		
HP-1 (plate)			8.79	99.84
HP-2 (plate)			8.01	100.62
HP-2 (plate)	7.73			100.62
	108.35			
HP-1 (plate)			8.49	99.86
BM			8.34	100.01

WSE

TR-5 - Pool

Bank Profile & WSE 6/27/07

STA	BS	HI	FS	Eleva	Red/Sub.
		108.35			
42.60 RWP			10.50		bedrock
42.1			11.68		"
41.2			12.82		"
40.4 RWE/RWS			13.69	94.66	0.0 bedrock
11.00 LWP/LWS			13.70	94.65	0.0 bedrock
9.6			11.60		bedrock
7.70			7.93		"
7.00			7.50		"
4.90			9.92		"
4.0			9.34		"
2.2			9.14		"
LWP - 1.0			8.14		"
-3.0			3.69		"

Reach 3 upper				
TR-4 Riffle / control level loop 6/27/07				
STA	BS	HI	FS	Eleva
BM	4.93			100.00
		104.93		
HP-1			5.43	99.50
HP-2			0.38	104.55
(TP) HP-2	0.55			104.55
		105.10		
HP-1			5.60	99.50
BM			5.09	100.01

Reach 3 upper				
TR-4 Bank profile & WSE 6/27/07				
STA	BS	HI	FS	Eleva
RWP= 140.0		105.10	6.66	61.1
136.6			6.94	"
136.0			6.95	"
135.6			8.82	60.5 H
RWE= 133.5			11.05	alt veg
RWS			11.09	94.01
MWS #103			11.02	94.08
LWS 66.8			10.99	94.11
60.5			10.31	45 m/sr
54.2			9.65	"
48.8			9.35	"
42.0			9.17	mod gr 20
39.2			9.12	10
30.9			9.35	"
25.1			9.62	"
22.5			9.33	"
24.1			9.31	action channel
19.3			9.30	st 10' fr
14.3			9.20	"
13.7			8.16	"
10.5			7.05	"
6.5			6.55	"
4.0			5.25	"
3.3			5.32	"
2.9			4.42	"
1.0			4.83	"

Ranch 3 upper

TR-4 Riffle / Control

6/27/07

STA	Depth	Vel	Don	Sub	% Down
LWP: 1.0					
LWP: 86.9	0.0	0.0	LG	MG	60
70.0	0.3	~ 0.05	"	"	60
73.0	0.58	~ 0.05	"	"	60
76.0	0.78	~ 0.05	"	sm cob.	70
79.0	0.75	~ 0.05	sm cob.	Lg. gra	60
82.0	0.85	~ 0.05	Lg. gr.	sm cob.	60
85.0	0.80	~ 0.05	"	md gra	60
88.0	0.88	~ 0.05	"	md gra	60
91.0	0.70	~ 0.01	"	"	60
94.0	0.60	~ 0.01	"	"	60
97.0	0.55	~ 0.03	md gr.	Lg. gr.	60
100.00	0.52	0.11	Lg. gr.	md gr.	60
103.0	0.47	0.19	"	"	80
106.0	0.25	1.28	"	sm cob.	80
109.0	0.28	1.12	"	md gr.	70
112.0	0.30	1.70	Lg. gr.	md gr.	80
115.0	0.30	2.88	"	"	70
117.0	0.70	0.46	md gr.	Lg. gr.	60
119.0	1.05	0.59	Lg. gr.	md gr.	60
121.0	1.55	2.00	"	sm cob.	60
123.0	1.55	2.09	Lg. gr.	sm gra	60

TR-4

6/27/07

Cover	Comments
—	
—	
—	
—	
—	
—	
—	
—	
—	
—	
—	75° angle
—	"
—	"
—	"
—	"
—	45° angle
—	60° "
—	45° "
—	" "
—	—
—	—

6/27/07

STA	Depth	Vel	Down	Sub	% Down
125.0	1.62	2.00	sm gr.	sand	60
127.0	1.40	1.57	"	"	60
129.0	1.30	0.80	sand	sm grav.	70
131.0	1.05	0.08	sand	"	90
133.3	0.5	0.0	sand	silt	100
133.5	0.0	0.0	sand	"	100

Reach 3 upper

Rifle / control
Cover

6/27/07

Comments:

GVH

ovH

0. V.H

OVH, LWD

ОВР, уцБ

11

RWE

Sutton R. Reach 3 Upper

TR-3 r/lle / transition

6/27/07

STA	BS	HI	FS	Eleva
Bm	0.27			100.00
		100.27		
HP-1			2.86	97.41
HP-2			0.18	100.09
(TP) HP-2	0.17			100.09
		100.26		
HP-1			2.86	97.40
Bm			0.27	99.99

TR-3

Bed Profile: WSE

6/27/07

STA	BS	HI	FS	Eleva	Sib/Red
		100.26			
LWP: 1.0			4.63		veg/LWP
3.6			6.01		sand/sand
5.0			5.64		"
7.6			6.53		sm gr mod gr 60
13.1			7.27		{
17.2			5.97		
22.2			5.52		
31.3			5.35		
34.5			7.06		sm gr/mod gr
37.7			8.01		mod gr 49%
40.1			8.20		
41.5			8.85		{
LWE: 45.2			9.21	91.05	
RWE: 70.2			9.24	91.02	mod gr sm gr
74.8			8.66		
77.7			8.19		mod 47%
79.3			8.41		
LWE 81.4			9.24	91.02	mod gr sm gr 70
RWE 96.2			9.25	91.01	
98.2			8.02		{
106.6			5.85		
114.9			5.57		
116.0			5.03		

Reach 3 upper

TR- 3	D = V	6/27/07					
STA	Depth	Vel	Dom	Sub	% Dom	Cover	Comments
LWE 45.2	0.0	0.0	sm cob	lg gr	60	—	
46.5	0.05	~ 0.1	"	"	"	—	
48.0	0.17	1.08	Lg gr.	sm cob	60	—	
49.0	0.30	1.45	"	"	"	—	
50.0	0.62	1.53	"	"	"	—	
51.0	0.85	1.67	"	"	"	—	
52.0	0.97	1.52	sm cob.	Lg gr.	60	—	
53.0	1.20	1.90	"	"	60 70	—	
54.0	1.30	2.04	"	"	"	—	
55.0	1.42	2.00	"	"	"	—	
56.0	1.55	2.05	"	"	60	—	
57.0	1.60	2.07	Lg gr	sm cob.	70	—	
58.0	1.52	2.06	"	"	80	—	
59.0	1.40	2.12	"	"	70	—	
60.0	1.30	2.00	"	med gr.	60	—	
61.0	1.20	2.07	"	"	70	—	
62.0	0.95	1.94	"	"	60	—	
63.0	0.82	1.69	med gr.	Lg gr.	60	—	
64.0	0.67	1.98	"	"	60	—	
65.0	0.50	1.80	"	"	60	—	
66.0	0.25	1.70	"	"	60	—	
67.0	0.20	1.17	"	"	60	—	15° angle
68.5	0.10	0.63	"	sm cob.	70	—	"
70.2 RWE	0.0	0.0	Lg gr	med gr.	60	—	

TR-3 D.E. V. casti. 6/27/07

6/27/07

STA	Depth	Vel	Dom	Sub	% Dom
81.3 ONE	0.0	0.0	med gr	sm gr	60
83.0 ONE	1.27	0.0	"	"	60
85.0	2.60	0.0	"	"	"
87.0	2.65	0.0	"	"	"
89.0	2.35	0.0	"	"	60
91.0	1.82	0.0	"	"	"
93.0	1.10	0.0	"	"	"
95.0	0.50	0.0	"	"	"
R 96.2 E	0.0	0.0	"	"	"

R 96.2
W
E

Cover

Comments

Zero flow

back water / over flow channel

6/27/07

TR-3 Bed Profile Continue

STA	BS	HI	PS	Eleva	Subst.
118.3		100.26	4.76		med gr sm gr 60
122.5			4.44		
125.3			3.77		
128.8			4.32		
133.3			4.05		
138.3			4.00		
140.2			3.65		
152.0 RWP			3.32		med gr sm gr 60

suffer;

Blank

Reck 3 upper

TR-2	Riffle	Level	Loop	6/27/07
STA	BS	HI	FS	Eleva
BM-	3.30			100.00
		103.31		
HP-1			0.50	102.81
HP-2			3.15	100.16
HP-2	3.06			100.16
		103.22		
HP-1			0.41	102.81
BM			3.22	100.00

Reck 3 upper

TR-2	Riffle	Bed	Prof. Le	E	WSE	6/27/07
STA	BS	HI	FS	Eleva	Sub/Red	
RWP=165.2		103.22	3.58			
163.1			1.27			
159.8			1.74			
156.2			2.52			
155.9			5.43			
150.8			6.29			
147.5			7.18			
143.3			7.77			
140.2			7.98			
134.9			7.37			
131.4			7.37			
129.1	RWF		8.53			
125.6	LWE		8.51			
118.8			7.77			
114.4			7.69			
106.3			7.51			
101.3	RWE		7.89			
48.7	LWE		8.00			
48.0			6.80			
47.1			6.59			
46.6			7.89			
45.4			7.97			
41.5			7.62			
41.0			6.50			

Reach 3 upper

TR-2 Riffle DE V

6/27/07

STA	Depth	Vel	Dom	Sub.	% Dom
LWE=48.7	0.0	0.0	Lg cob	bls	60
51.0	0.10	0.05	bls	Lg cob	70
53.0	0.70	0.49	"	sm cob	60
54.5	0.37	0.44	sand	sm grav	80
55.6	0.0	0.0	sand	"	90
57.0	out				
57.9	0.0	0.0	"	"	90
59.5	0.48	0.29	Lg cob	sand	60
61.0	0.88	0.47	"	bls	60
62.5	0.85	1.41	bls	Lg cob	70
64.5	0.45	1.61	"	"	"
66.6	0.90	0.28	"	"	"
67.7	1.0	0.17	"	sand	80
68.3	0.0	-	"	"	"
70.5	0.45	0.01	bls	Lg cob.	60
72.0	0.55	0.14	Lg cob	bls	60
74.0	0.65 1.05	1.51	bls	sm cob	60
76.0	1.32	0.71	sm cob	Lg cob	60
78.0	0.90	2.00	"	"	60
80.0	0.75	1.96	Lg gr	sm cob	60
82.0	1.1	2.17	sm cob	Lg gr.	60
84.0	0.8	2.37	Lg gr	med. gr.	60
86.0	0.67	2.59	"	"	70

Cover

Comments

0.20 out

15° angle

"

"

top bls

edge bls

basal bls

top bls

ch/bld

w/s red break

"

w/s red

break

6/23/07

TR-2 D₂ V Continue

STA	Depth	Vel	Drn	Sub	% Data
87.8	0.67	1.8	Lg. gr	bld	70
89.0	0.5	0.21	bld	sand	60
90.5	0.65	1.27	sm. cob	bld	60
92.5	0.45	1.88	"	Lg. cob	80
95.0	0.30	0.87	"	Lg. grav	80
96.9	0.2	0.37	"	"	70
99.1	0.1	0.05	Lg. cob	sm. cob	60

RWE 101.2

LWE 125.6 0.0 0.0

126.5	0.15	1.3	Lg. gr	med. gra	70
127.0	0.15	1.72	"	"	"
128.0	0.15	1.31	"	"	"
129.1 RWE	0.0	0.0	"	"	"

Cover

Cumulative

bld

u/s vel brch

TR-2 Bed Profile Continue 6/27/07

STA	BS	HF	FS	Eleva	Sub
38.6			6.30		6ld / bed 70
36.5			7.40		" 70
31.1			6.69		med gr 60
26.0			6.86		"
22.1			7.20		"
18.1			6.48		"
13.2			5.91		med gr 60
11.4			6.25		
9.2			6.40		
6.5			5.97		
4.5			5.14		
1.9			4.99		
1.0 LWP			4.59		

Trib. contribution

2.3 wide

Ave: 0.1 depth

Ave: 1.08, 0.74 velocity

Blank

Reach 3 upper

TR-1 Level Loop Casc. 6/27/07

STA BS HI FS Eleva

BM (bott)	1.38			100.00
		101.38		
HP-1 (rebar) (1st set)			2.00	99.38
HP-2 (rebar) (1st set)			1.57	99.81
HP-2 (IP)	1.46			99.81
		101.27		
HP-1			1.88	99.39
BM			1.27	100.00

Reach 3 upper

TR-1 Casc. Bed Profile WSE 6/27/07

STA BS HI FS Eleva. Sub/Rad

LWP=1.0		101.27	2.55		bld k.t
4.6			3.28		"
6.5			3.96		"
6.8			5.56		"
11.0			5.72		sum 9 60
14.1			6.01		medgr sum 9 60
LWE=17.6			7.39		0.0
22.7 WSE			7.43		
25.5 WSE			7.71		
36.1 "			7.71		
44.2					
39.0 WSE			7.38		
60.0 "			7.39		
76.0 "			7.15		
76.0			7.39		
80.6 RWE			7.37		
81.4			5.95		
84.4			4.52		
86.5			6.23		
87.0			4.82		
89.4			6.18		
91.9			5.05		
93.2			4.39		
97.8			3.14		

Reach 3 upper

TR-1	Casc.	Dev	6/27/07		
STA	Depth	Vel	Down	Sub.	% Down
LWE=17.7	0.0	0.0	sand	sm gr	60
21.0	0.2	0.01	Lg gr	med gr	70
23.0	0.1	0.02	"	"	70
26.0	0.5	0.26	med grav	small gr.	70
28.8	1.0	0.58	Lg cob	sand	60
31.0	0.98	0.13	sand	sm gr	90
33.5	0.80	0.41	sm cob	sand	60
34.5	Left edge huge bld				
41.0	Right edge				
38.0	0.55	1.25	bld	sm cob	80
41.0	0.48	1.30	bld	Lg gr	80
43.0	0.20	2.2	Lg gr	med gr.	60
44.2	0.27	0.15	sm gr	sand	60
45.4	0.50	2.09	Lg gr	med gr	60
48.0	0.40	2.32	med gr	Lg gr	60
51.0	0.30	1.49	sm cob	Lg gr	60
53.0	0.60	2.05	bld	sm cob	80
54.0	0.10	1.18	"		100
56.0	1.0	3.40	"	Lg cob	60
58.5	1.0 0.85	3.07	"	"	"
61.0	1.15	2.05	"	Lg gr	80
62.0	0.10	0.75	"		100
63.0	1.25	0.90	"	Lg gr	80

Cover

Comments

75° angle
"u/s bld vel break
70° angle

80° angle

u/s vel break

edge of bld
top bld

Reach 3 upper					
TR-1					
Continue Case					
STA	Depth	Vel	Dir	Sub	% Dir
64.5	1.15	2.20	Lg. cobb	bld	60
65.8	1.35	1.69	"	"	"
68.0	1.45	0.01	bld	sand	80
70.0	0.85	0.64	"	Lg. gr	80
70.1	out 1.1	—	"	"	90
72.0	out 0.8	—	"	"	90
74.4	out 0.90	—	"	"	90
74.5	1.15	2.77		Lg. cobb	80
75.90	0.45	0.47	"	"	70
77.0	0.0	—	"	"	90
78.2	0.20	1.49	"	"	80
78.8	out .20	—	"	"	90
80.0	0.15	~ 0.05	"	"	80
80.6	0.0	0.0	"	"	80

* STA 41-71 contains most of the flow and is most representative of Ave WSE. *

Reach 3 upper		
TR-1 case		
6/27/07		
Cover	Comments	
	edges bld	
	u/s vel break bld	
	"	
	top bld	
	RWE	

Reed 3 upper

6/27/07

TR-1 Case. Bed Prof. Le EWSF Contino

STA BS HI ES Elev

95.8

4.26

99.3

3.72

105.4 RWP

2.98

110.0

1.70

Blank

6/28/07

Sultan R. ~150 cfs Flow Reduced

	In	Out
Time	8:00	3:40
S.G.	12. ³ / ₄	12. ³ / ₄

Crew: M. Gagner
T. Sullivan
A. Weybright

Equipment: Level Zeiss N140
Staff # 3602
prop: SA 4.5

6/28/07

TR-6 R/L/L Lead Loop E WSE

STA	BS	HI	FS	Elev	Rod
BM	3.28			100.00	
		103.28			
HP-1			5.50	97.78	
HP-2			5.13	98.15	
HP-2	4.90			98.15	
		103.05			
HP-1			5.27	97.78	
BM			3.05	100.00	
		103.05			
RWS (47.0)			10.15	92.90	
MWS (36.0)			10.14	92.91	
LWS (18.0)			10.06	92.99	
LWS (19.0)			10.07		
u/s 56.0			10.00	93.05	

TR-6 STA	Depth	Vel	D = V	Comments
54.3	0.0	0.0	—	wet edge
52.5	0.2	0.75	—	45° angle
51.5	.45	0.94		w/s vel break
50.6	0.80	2.99		
49.6	1.0	3.54		
49.0	0.90	3.61		
48.0	1.20	2.27		
47.0	1.50	2.85		
45.5	1.80	4.01		
44.0	1.90	4.17		
43.0	1.90	4.36		
41.5	1.65	4.15		
40.3	2.27	3.83		
39.0	2.30	3.95		
37.5	2.30	3.98		
36.0	1.85	2.99		
35.0	1.90	3.63		
33.5	1.90	2.67		
32.0	1.87	2.71		
30.5	1.60	2.92		
29.0	1.32	2.10		
27.5	1.27	2.10		
26.0	1.12	2.00		
24.5	1.12	7.54	2.04	

STA	TR-6 Depth	Rifle Vel	Div Comment
22.5	1.10	1.94	
20.2	1.05	1.65	
18.5	1.02	1.28	
17.0	0.80	1.84	
15.5	0.5	1.30	
13.7	0.30	0.64	
LWE = 12.9	0.0	0.0	

meter: swaffer # 3602
prop SA
cat: 0175

Reach 3 Upper

6/28/07

TR-5 Pool Level Loop & WSE

STA	BS	HI	FS	Eleva	Red
-----	----	----	----	-------	-----

BM-1	8.90			100.00	
------	------	--	--	--------	--

108.90

HP-1			9.04	99.86	
------	--	--	------	-------	--

BM-2			3.70	105.20	
------	--	--	------	--------	--

HP-2			8.29	108.61	
------	--	--	------	--------	--

(TP)

HP-2	7.99			100.61	
------	------	--	--	--------	--

108.60

HP-1			8.75	99.85	
------	--	--	------	-------	--

BM-2			3.40	105.20	
------	--	--	------	--------	--

BM-1			8.60	100.00	
------	--	--	------	--------	--

LWS(100.0)			13.25	95.35	
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RWS(40.0)			13.25	95.35	
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~~BM-2~~

96.35

96.65

— 11

TR-5 Pool

D & V

6/28/07

STA	Depth	Vel	Dir	Sub	3
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RWP=42.6

* mean column velocity *

RWE=41.0	0.0	0.0	bed		100
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39.5	4.32	-0.03	"	silt	90
------	------	-------	---	------	----

38.0	3.85	.01	"	—	100
------	------	-----	---	---	-----

36.5	3.10	.03	"	—	100
------	------	-----	---	---	-----

35.0	6.30	0.15	"	silt	90
------	------	------	---	------	----

33.5	5.20	0.36	"		100
------	------	------	---	--	-----

32.0	5.68	0.67	"		100
------	------	------	---	--	-----

30.5	7.30	0.93	"		100
------	------	------	---	--	-----

29.0	7.60	0.88	"		100
------	------	------	---	--	-----

27.5	10.4	0.96	"		
------	------	------	---	--	--

26.0	10.4	1.11			
------	------	------	--	--	--

24.5	10.5	0.85			
------	------	------	--	--	--

23.0	10.1	1.15			
------	------	------	--	--	--

21.5	8.9	0.99		silt	90
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20.0	8.7	1.02			80
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18.5	7.90	1.07			
------	------	------	--	--	--

17.0	7.50	1.04			
------	------	------	--	--	--

15.5	7.60	1.01			
------	------	------	--	--	--

14.0	7.70	0.38			80
------	------	------	--	--	----

12.5	2.05	0.31	Bed	—	100
------	------	------	-----	---	-----

11.2	1.40	0.07			
------	------	------	--	--	--

LWE=10.5	0.0	0.0			
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 swaffn # 3602
 prop: 5B

Calc: 0.125

Reach 3 upper

6/28/07

TR-4 Rifle / central Level Loop & WSE
 STA BS HI FS Eleva Rod

BM-1	5.80			100.00	
		105.80			
HP-1 (bolt in log L)			6.30	99.50	
BM-3			1.19	104.61	
HP-2 (bolt in log L)			1.27	104.53	
HP-2	1.07			104.53	
		105.60			
BM-3			0.99	104.61	
HP-1			6.10	99.50	
BM-1			5.60	100.00	
		105.60			
RWS (131.0)			10.88	94.72	
MWS (104.0)			10.84	94.76	
LWS (65.0)			10.83	94.77	

Reach 3 upper

6/28/07

TR-4 Rifle D & V
 STA Depth Vel Comments

RWE: 134.2	0.0	0.0	
133.5	0.9	-0.05	OVH & LWD
133.3	1.30	-0.05	OVH & LWD
131.0	1.65	-0.26	OVH & LWD
129	2.02	0.80	OVH & u/s vel break
127	2.10	1.46	OVH
125	2.35	2.02	OVH
123	2.30	2.45	
121	2.30	2.39	
119	1.95	2.53	
117	1.45	2.65	
115	1.15	2.83	
112	1.02	2.58	
109	0.95	2.41	
106	0.95	2.09	
103	1.25	1.78	
100.0	1.25	1.70	
97.0	1.27	1.63	10" ang.
94	1.30	1.50	
91	1.40	1.90	10" ang.
88	1.48	1.54	
85	1.52	1.58	10" ang.
82	1.55	1.64	
79	1.47	1.66	

Reach 3 upper

TR-4

continue

6/28/07

STA	Depth	Vel	Comments
76	1.45	1.74	
73	1.30	1.72	
70	1.00	1.77	15' aug
66.9	0.60	1.68	
66.0	0.50	1.48	
64.0	0.25	1.19	

RWP= 1.0

LWP= 140.0

60.3 0.0 0.0 LWE

swiffer : 3602

prop : 5A

cal : 0175

Blank

Reach 3 upper

6/28/07

TR-3 Level Loop \pm WSE

STA	BS	HI	FS	Eleva	Red
BM nail log	0.30			100.00	
		100.32			
HP-1 (nail)			2.89	97.43	
HP-2 (nail) (IP)			0.21	100.11	
HP-2	0.22			100.11	
		100.33			
HP-1			2.90	97.43	
BM			0.32	100.01	
LWS (44.0)			8.44		
MWS (56.0)			8.45	91.88	
RWS (71.0)			8.45		
LWS (80.0)			8.45		
RWS (96.0)			8.44	91.89	
u/s 60' WSE			8.33	92.00	
d/s 60' WSE			9.31	91.02	

Reach 3 upper

June 28, 07

TR-3 D \pm V

STA	Depth	Vel	Comments
LWE = 40.4	0.0	0.0	
42.0	0.45	0.70	
43.0	0.45	1.78	
44.0	0.60	1.97	
45.2	0.85	2.05	
46.5	0.95	2.57	
48.0	1.15	2.52	
49.0	1.20	2.72	
50.0	2.40	2.80	
51.0	1.65	2.89	
52	1.88	3.15	
53	2.05	3.25	
54	2.15	3.41	
55	2.30	3.42	
56	2.48	3.55	
57	2.50	3.72 / 3.40	
58	2.45	3.43	
59	2.35	3.68	
60	2.22	3.75	
61	2.10	3.78	
62	1.85	3.93	
63	1.17	3.88	
64	1.53	3.80	

6/28/07

TR-3 D & U continue

STA	Depth	Vel	Comments
65	1.45	3.85	
66	1.27	3.68	
67.0	1.17	3.81	
68.5	1.0	3.53	
70.2	0.8	3.47	
72.0	0.60	2.82	
74.0	0.30	2.67	
RWE-76.2	0.0	0.0	

78.0	out 0.3	top island	
LWE-79.1	0.0	0.0	
81.3	0.95	-0.10	
83.0	2.10	0.05	
85.0	3.30	$\frac{0.31}{0.24}$	
87.0	3.50	$\frac{0.71}{0.84}$	
89.0	3.18	$\frac{0.44}{1.05}$	w/s woody debris DWH & Veg
91.0	2.70	$\frac{0.08}{0.58}$	" "
93.0	2.00	$\frac{0.16}{0.16}$	" "
95.0	1.35	-0.10	" "
96.2	0.92	~ -0.05	est. "
RWE-97.6	0.0	0.0	

swd/k: 3602

pmp: 5A

cali 0175

Reach 3 Upper

6/28/07

TR-2 Riffle Level Loop E. WSE

STA	BS	HI	FS	Clevs	Red
BM	3.22			100.00	
		103.22			
HP-1			0.41	102.81	
HP-2			3.05	100.17	
HP-2 (FP)	3.22			100.17	
		103.39			
HP-1			0.57	102.82	
BM			3.39	100.00	
		103.39			
RWS (125.0)			7.64	95.75	
MWS (86.0)			7.51	95.88	
LWS (55.0)			7.73	95.66	
WSE (100.6)			7.69	95.85	0.15
(61.0)			9.22		1.54
d/s (~60'.0)			9.45		1.20
u/s (~60'.0)			8.80		1.85

Reach 3 upper

June 28, 07

TR-2 STA	Depth	Vel	Comments
LWE 42.6	0.0	0.0	
45.0	0.37 0.08	0.08	u/s bld
46.7	0.22	0.56	edge bld
47.2	out 1.10	—	top bld
48.3			edge bld
48.4	0.2	2.38	
48.7	0.2	2.54	
51.0	0.40	2.64	
53.0	1.07	2.18	
54.5	0.85	0.80	u/s vel break
55.6	0.50	0.29	"
57.0	0.35	0.30	"
57.9	0.50	0.19	"
59.5	0.92	0.31	"
61.0	1.32 0.82	1.13	
62.5	1.32 1.00	3.28	15° angle
64.5	1.02	3.66	"
66.6	1.55	2.22	"
67.7	1.55	0.61	u/s vel break
68.3	0.55	2.04	top bld
70.5	0.95	0.43	
72.0	1.05	0.49	
74.0	1.62	2.80	
* 73.0	1.5	0.80	

Reach 3 upper

6/28/07

TR-2 Riffle continue

STA	Depth	Vel	Comments
76.0	1.95	2.57	
78.0	1.50	3.39	15° angle
80	1.50	3.28	
82.0	1.55	3.45	
84.0	1.60	4.32	
86	1.40	4.39	
87.8	1.10	4.41	
89.0	0.95	4.22	
90.5	1.07	2.90	
92.5	1.00	2.43	
95.0	0.95	2.50	
96.9	0.75	0.83	
99.1	0.50	0.48	
101.2	0.55	1.47	
*98.0	0.60	4.33	
100.0	0.5	3.14	
103.5	0.35	2.77	Lg sm? 70
106.0	0.15	1.74	Lg gr sm cab 60
108.0	0.45	2.13	Lg gr med gr 50
112.0	0.25	1.45	"
114.5	0.35	1.81	20° angle "
117.0	0.25	2.24	35° " "
120.0	0.35	2.18	" "

TR-2 Riffle cont. 6/28/07

STA	Depth	Vel	Comments
123.0	0.65	1.69	
125.6	1.0	2.32	15° angle
126.5	1.20	2.59	"
127.0	1.30	2.23	"
128.0	1.20	1.96	"
129.1	0.95	2.25	
RWE 131.2	0.0	0.0	
LWE = 135.8	0.0	0.0	sand sm grav 80
140.0	0.5	0.0	"
144.5	0.35	0.0	"
RWE = 146.7	0.0	0.0	"

06/28/07

TR-1 Casc. Level Loop & WSE

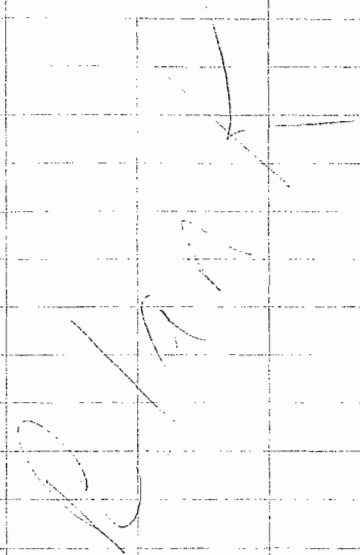
STA	BS	HI	FS	Eleva	Rod
BM	1.34			100.00	
		1.34			
PP-1			1.96	101.14	
PP-2			1.53	101.81	
PP-2	1.41			103.31	
PP-1			.84	102.33	
BM			1.82	100.00	
WWS (100.00)			2.33		
34.0			2.15		
43.0			2.43		
56.0			2.52		
60.0			2.43		
63.0			3.95		
65 ~ 60'			4.23		
65 ~ 65'			5.83		

06/28/07

TR-1 Casc. D & V

STA	Depth	Vel	Current
15.9	0.0	0.0	LWE
17.7	0.5	0.34	
21.0	0.52	1.93	
23.0	0.55	1.14	
26.0	1.55	0.55	
30.0	1.32	1.64	
31.0	1.22	2.55	
33.5	1.50	2.35	20' 10"
34.5	1.60	2.18	"
38.0	2.35	4.52	20' 10"
41.0	1.1	1.45	10' 10"
* 42.5	1.40	1.55	
43.0	1.35	2.66	
44.2	1.33	3.41	
45.4	1.10	2.15	
48.0	1.0	4.10	
51.0	1.1	3.00	
53.0	1.20	4.00	
54.0	0.95	4.51	10' 10"
56.0	1.30	4.33	
58.5	2.05	2.72	10' 10"
61.0	1.88	2.43	"
62.0	1.45	2.78	"
* 67.0	1.35	3.25	

12	10	10	10
0.16	0.16	0.16	0.16
1.52	1.52	1.52	1.52
2.32	2.32	2.32	2.32
3.17	3.17	3.17	3.17
4.00	4.00	4.00	4.00
4.83	4.83	4.83	4.83
5.66	5.66	5.66	5.66
6.49	6.49	6.49	6.49
7.32	7.32	7.32	7.32
8.15	8.15	8.15	8.15
8.98	8.98	8.98	8.98
9.81	9.81	9.81	9.81
10.64	10.64	10.64	10.64
11.47	11.47	11.47	11.47
12.30	12.30	12.30	12.30
13.13	13.13	13.13	13.13
13.96	13.96	13.96	13.96
14.79	14.79	14.79	14.79
15.62	15.62	15.62	15.62
16.45	16.45	16.45	16.45
17.28	17.28	17.28	17.28
18.11	18.11	18.11	18.11
18.94	18.94	18.94	18.94
19.77	19.77	19.77	19.77
20.60	20.60	20.60	20.60
21.43	21.43	21.43	21.43
22.26	22.26	22.26	22.26
23.09	23.09	23.09	23.09
23.92	23.92	23.92	23.92
24.75	24.75	24.75	24.75
25.58	25.58	25.58	25.58
26.41	26.41	26.41	26.41
27.24	27.24	27.24	27.24
28.07	28.07	28.07	28.07
28.90	28.90	28.90	28.90
29.73	29.73	29.73	29.73
30.56	30.56	30.56	30.56
31.39	31.39	31.39	31.39
32.22	32.22	32.22	32.22
33.05	33.05	33.05	33.05
33.88	33.88	33.88	33.88
34.71	34.71	34.71	34.71
35.54	35.54	35.54	35.54
36.37	36.37	36.37	36.37
37.20	37.20	37.20	37.20
38.03	38.03	38.03	38.03
38.86	38.86	38.86	38.86
39.69	39.69	39.69	39.69
40.52	40.52	40.52	40.52
41.35	41.35	41.35	41.35
42.18	42.18	42.18	42.18
43.01	43.01	43.01	43.01
43.84	43.84	43.84	43.84
44.67	44.67	44.67	44.67
45.50	45.50	45.50	45.50
46.33	46.33	46.33	46.33
47.16	47.16	47.16	47.16
47.99	47.99	47.99	47.99
48.82	48.82	48.82	48.82
49.65	49.65	49.65	49.65
50.48	50.48	50.48	50.48
51.31	51.31	51.31	51.31
52.14	52.14	52.14	52.14
52.97	52.97	52.97	52.97
53.80	53.80	53.80	53.80
54.63	54.63	54.63	54.63
55.46	55.46	55.46	55.46
56.29	56.29	56.29	56.29
57.12	57.12	57.12	57.12
57.95	57.95	57.95	57.95
58.78	58.78	58.78	58.78
59.61	59.61	59.61	59.61
60.44	60.44	60.44	60.44
61.27	61.27	61.27	61.27
62.10	62.10	62.10	62.10
62.93	62.93	62.93	62.93
63.76	63.76	63.76	63.76
64.59	64.59	64.59	64.59
65.42	65.42	65.42	65.42
66.25	66.25	66.25	66.25
67.08	67.08	67.08	67.08
67.91	67.91	67.91	67.91
68.74	68.74	68.74	68.74
69.57	69.57	69.57	69.57
70.40	70.40	70.40	70.40
71.23	71.23	71.23	71.23
72.06	72.06	72.06	72.06
72.89	72.89	72.89	72.89
73.72	73.72	73.72	73.72
74.55	74.55	74.55	74.55
75.38	75.38	75.38	75.38
76.21	76.21	76.21	76.21
77.04	77.04	77.04	77.04
77.87	77.87	77.87	77.87
78.70	78.70	78.70	78.70
79.53	79.53	79.53	79.53
80.36	80.36	80.36	80.36
81.19	81.19	81.19	81.19
82.02	82.02	82.02	82.02
82.85	82.85	82.85	82.85
83.68	83.68	83.68	83.68
84.51	84.51	84.51	84.51
85.34	85.34	85.34	85.34
86.17	86.17	86.17	86.17
87.00	87.00	87.00	87.00
87.83	87.83	87.83	87.83
88.66	88.66	88.66	88.66
89.49	89.49	89.49	89.49
90.32	90.32	90.32	90.32
91.15	91.15	91.15	91.15
91.98	91.98	91.98	91.98
92.81	92.81	92.81	92.81
93.64	93.64	93.64	93.64
94.47	94.47	94.47	94.47
95.30	95.30	95.30	95.30
96.13	96.13	96.13	96.13
96.96	96.96	96.96	96.96
97.79	97.79	97.79	97.79
98.62	98.62	98.62	98.62
99.45	99.45	99.45	99.45
100.28	100.28	100.28	100.28



Sta 12+00 R. Kern. 3 upper

Time 9:00

S. 16 17.1/2

Crew: M. G. G. G.

J. G. G. G.

A. W. G. G.

Equipment:

Sta 12+00

Runch 3 upper

4/29/07

H-6 R. Kern. Level comp E WSE

STA BS HI FS Elev. Rod

BM 3.91 130.00

HP-1 3.91

6.13 77.78

HP-2 5.76 98.15

TP 5.93 98.15

HP-2 5.93 98.15

HP-1 5.37

BM 3.71

BM 3.86 130.00

HP-1 6.08 97.73

HP-2 5.71 98.15

10.69 93.73

10.13 93.73

10.69 93.17

10.55 93.01

10.31 93.59

10.38 10.48

10.69 93.73

10.13 93.73

10.69 93.17

10.55 93.01

10.31 93.59

10.38 10.48

10.69 93.73

10.13 93.73

10.69 93.17

10.55 93.01

10.31 93.59

10.38 10.48

2-6 R/L 0.1/0.35 0.1/0.35

STA	Depth	Vel	Comments
58.2	0.0	0.0	RWE
55.5	0.35	0.42	ups vel break (b/L)
54.3	0.50	1.0	
52.5	0.57	4.11	
51.5	0.75	3.24	
50.6	1.15	4.19	
49.6	1.40	4.99	
48.5	1.85	3.84	
47.0	2.20	4.53	
45.5	2.20	4.93	
44.1	2.32	5.87	
43.0	2.40	5.94	
41.5	2.10	5.77	
40.5	2.15	5.57/2.69	
39.0	2.85	5.88/4.57	
37.5	2.75	5.63/2.98	
36.0	2.47	4.90	
35.5	2.40	5.10	
33.5	2.45	4.95	
32.0	1.40	4.40	
30.5	2.12	4.58	
29.0	1.78	4.32	
27.5	1.70	4.16	

2-6 R/L Continue 0.1/0.35

STA	Depth	Vel	Comments
26.5	1.67	3.90	
24.5	1.70	3.70	
22.5	1.70	3.57	
20.5	1.52	2.76	
19.5	1.62	2.64	
17.0	1.45	2.09	
15.5	0.90	3.20	
13.7	0.83	2.54	
12.9	0.55	1.97	
11.3	0.40	0.71	OVH
LWE 9.7	0.0	0.0	LWE
* 57.0	0.3	1.42	

6/28/07

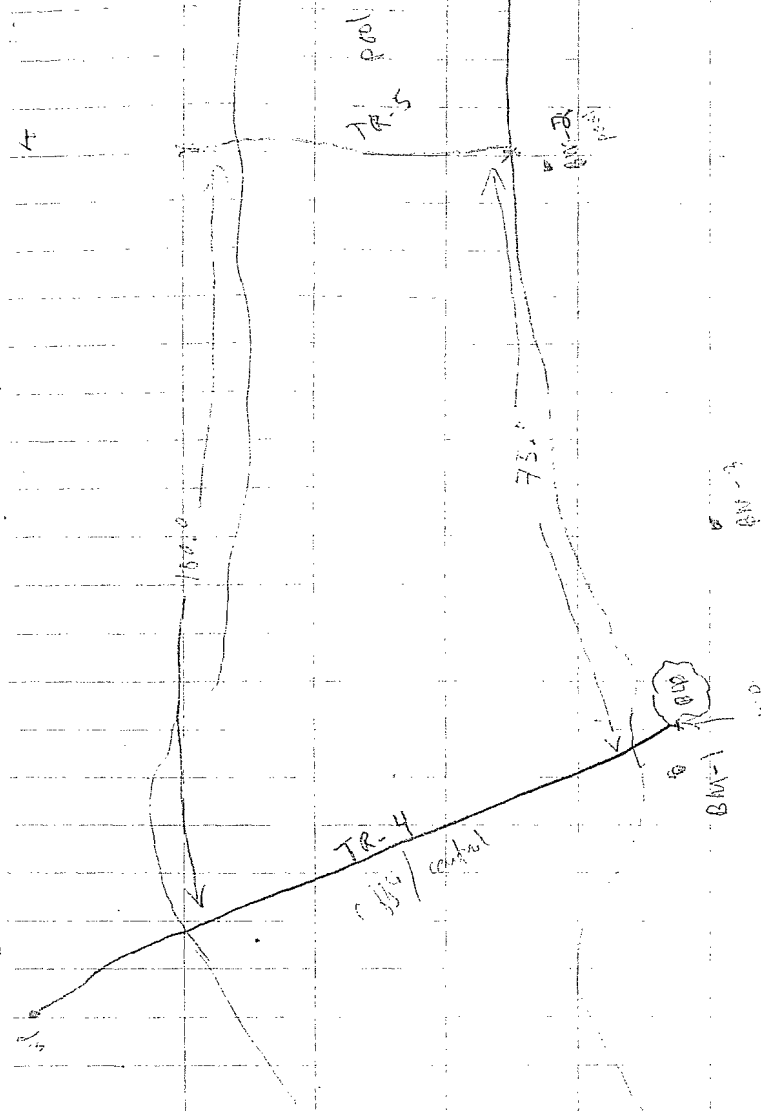
TR-5 Pool Level Loop E. WSE

STA	BS	HI	FS	Elev
BM-1	9.43			100.00
		109.43		
HP-1			9.56	99.37
BM-2			4.23	105.20
HP-2			8.82	100.61
BM-2	8.49			100.61
		109.10		
BM-2			3.23	105.20
HP-1			9.23	99.87
BM-1			9.08	100.02
		109.10		
LWS (11.0)			13.34	
RWS (39.0)			13.33	95.77

LWE = 10.20

RWE = 41.60

use ave of TR-6 & TR-4
for TR-5 discharge



6/29/07

TR-4 Riffle/control Lead Leg & WSE					
STA	BS	HI	FS	Elev	Red
BM-1	5.73			105.57	
		105.18			
BM-3			0.57	104.61	
HP-2			0.65	104.57	
TP					
HP-2	8.93			104.57	
		105.46			
BM-3			0.85	104.61	
BM-1			5.45	100.41	
ROWS (187.0)			10.39		
MWS (191.0)			10.35		
LWS (194.0)			10.36		
BM-3	4.50	TR-4		104.61	
BM-2 pool	TR-5		4.46		
* HP-1 moved - d! not use *					

TR-4 Riffle D & V				6/29/07
STA	Depth	Vel		Complete
56.9	0.0	0.0		
59.0	0.1	0.69		
61.5	0.45	1.62		
64.0	0.65	2.08		
66.0	0.85	2.57		
66.9	1.02	2.63		
70.0	2.35	2.76		
73.0	1.70	2.77		
76.1	1.82	2.80	10° angle	
79	1.85	2.70		
82	1.95	2.78		
85	1.90	2.83		
88	1.85	2.86		
91.0	1.8	2.70		
94.0	1.68	2.94		
97	1.60	2.95		
100.0	1.65	2.98		
103	1.55	2.98		
106	1.37	3.17		
109	1.35	3.35		
112	1.40	3.52		
115	1.55	3.84		
117	1.75	3.67		
119	2.30	3.51		

TR-4 Continue

6/29/87

STA	Depth	Vel.	Comments
121.0	2.65	3.40 2.81	
123.0	2.67	3.23 2.94	OVH
125.0	2.70	2.32 2.21	OVH
127.0	2.5	0.89 1.70	u/s vel break OVH
129.0	2.32	-0.18	OVH
131.0	1.92	-0.30	" " < LWD
133.0	1.40	-0.06	" "
133.5	1.20	-0.03	" "
134.2	0.60	-	" "
134.8	0.0	0.0	

TR-3 Run Level Loop & LWE 06/29/87

STA BS HI FS Eleva

BS 0.43 100.43 100.00

FS 1 3.18 97.41

FS 2 0.35 100.05

(TP)

FS 2 0.33 100.08

FS 100.41 3.00 97.41

BS 0.41 100.00

LWS (44.0) 9.05 100 1.09

LWS (74.0) 8.88 92.5 0.97

LWS (95.0) 10.11 2.97 2.14

W/S "60" 10.91 3.09

D/S "50" 10.49 1.69

TR-3 Run/Riffle Transition 6/29/87

STA Depth Vel Comments

LWE = 37.7 0.0 0.0

39.0 0.15 0.9

40.4 0.50 0.85

42 1.00 2.44

43 1.00 2.80

44 1.03 3.00

45.2 1.34 3.10

46.5 1.25 2.54

48 1.65 3.50

49 1.70 3.48

50 2.00 3.69

51 2.12 3.00

52 2.40 4.12

53 2.55 4.55 / 3.01

54 2.75 4.35 / 3.83

55 2.78 4.73 / 3.92

56 3.00 4.69 / 2.97

57 2.97 4.33 / 3.21

58.0 2.90 4.25 / 3.43

59.0 2.85 4.31 / 3.36

60.0 2.70 4.91 / 3.19

61.0 2.65 4.73 / 3.37

62.0 2.25 4.46

TR-3		Cont. No.		29/07	
STA	Depth	Vel	Comments		
63	2.15	4.47			
64	2.10	4.39			
65	2.00	4.31			
66	1.88	5.12			
67	1.75	5.16			
68.5	1.55	4.79			
70.2	1.32	4.29			
72	1.13	3.74			
74.0	0.90	3.45			
76.2	0.55	3.42			
78	0.30	3.32	15° angle		
79.1	0.55	2.07	35° angle		
81.3	1.38	0.52	"	1/2 sec. back/5 sec.	
83	2.60	0.35 0.13	"		
85	3.70	0.40 0.25	20° angle		
87	3.95	0.93 0.24	}		
89	3.60	0.94 0.57			
91	3.10	0.66 1.22			
93	2.55	0.95 1.70			
95	2.00	1.13	width 4.5 sec / 1.5 sec		
96	1.55	0.40	"		
97.6	0.80	0.05	"		
End = 98.3		0.0			

Blank

Pond 3 upper

TR 2	R	6/29/07
STA	RS	Red
BM	3.23	102.00
	103.23	
HP	0.41	102.82
HP	3.06	100.17
HP	2.99	100.17
	103.16	
	1.22	102.83
BM	3.12	97.00
	103.16	
RM (127.0)	8.55	1.7865
" (104.0)	7.65	0.73
LWS (77.0)	9.20	2.20
LWS (56.0)	7.90	0.69
LWS (43.0)	7.53	0.5
HP 60'	7.69	1.33
HP 60'	10.21	2.82

Pond 3 upper

TR 2	Dev	June 29, 07
STA	Depth	Vel
LWE 41.4	0.0	0.0
42.6	0.4	0.03
45.0	0.6	2.03
46.7	0.5	1.17
47.2	0.80	—
48.3	0.45	2.16
48.4	0.45	2.16
48.7	0.58	2.80
51.0	0.65	2.75
53	1.35	2.22
54.5	1.18	0.72
54.5	0.80	0.17
55.6	0.65	0.65
57.0		
57.9	0.90	0.05
59.5	1.05	0.15
61.0	1.57	1.28
62.5	1.60	1.36
64.5	1.60	3.53
66.6	1.55	3.18
67.7	1.62	1.36
68.3	0.8	3.54
70.5	1.25	1.89
72.0	1.40	1.45

TR-2	Continue	6/29/02	
Sta	Depth	Vel	Comments
74	2.07	3.71	
75	1.85	1.85	
76	2.22	3.44	
78	1.90	4.21	
80	1.37	3.17	20' angle
82	1.95	4.52	1
84	1.70	4.11	
86	1.65	5.71	
87.6	1.55	4.62	
89	1.10	4.72	10' angle
90.5	1.50	5.70	1
93.5	1.40	4.11	
95	1.25	3.72	
97.7	.92	3.91	
100	0.5	5.07	
102	0.80	3.10	3
100.5	0.90	4.39	
103.5	0.65	3.54	
106.0	0.50	2.90	
109.0	0.78	2.74	
112.0	0.65	2.86	
114.0	0.6	2.94	
117.0	0.75	3.59	15' angle
120.0	0.85	2.51	

TR - 2		Continue	6/29/02
STA	Depth	Vel	Comments
123	0.95	3.75	10' angle
125.6	1.55	2.49	
126.5	1.70	2.45	
127.0	1.75	2.51	SVH
128.0	1.65	2.23	SVH
129.1	1.30	1.46	SVH
131.2	0.60	0.40	SVH
133.0	0.30	0.0	
135.8	0.50	—	above/below
140	0.95	—	
144.5	0.80	—	
146.7	0.70	—	
RWE = 150.8	0.0	0.0	

6/29/07

TR-1 Case 2 Unit Comp. & WSE

STA BS HI FS Elevation Rod

200 1.01 1.23 22.13

201 1.01 1.23 22.13

202 1.01 1.23 22.13

203 1.01 1.23 22.13

204 1.01 1.23 22.13

205 1.01 1.23 22.13

206 1.01 1.23 22.13

207 1.01 1.23 22.13

208 1.01 1.23 22.13

209 1.01 1.23 22.13

210 1.01 1.23 22.13

TR-1 Case

6/29/07

STA Depth Vel Comments

LWSE = 14.8 1.0 1.0

15.9 1.50 2.1

17.7 1.5 2.41

21.0 1.5 2.72

23.0 1.5 2.26

26.0 1.35 2.63

27.5 1.35 2.33

28.8 2.32 1.93

31.0 2.05 1.76

33.5 2.5 2.716

34.5 2.40 3.24

38.0 2.2 2.81

41.0 3.15 1.86

43.0 2.32 3.51

44.2 2.25 4.32

45.4 1.40 4.4

48.0 1.60 4.81

51.0 1.70 3.19

53.0 2.15 2.9

54.0 1.50 2.06

56.7 2.00 4.01

57.0 2.00 2.80

58.0 2.00 2.34

61.0 2.00 4.21

TR-1 Case 6/29/07

STA Depth Vel

62.1 1.15 1.26

62.1 1.15 1.26

64.7 1.15 1.26

65.3 1.15 1.26

66.9 1.15 1.26

70 1.15 1.26

70.1 1.15 1.26

72 1.50 1.33

74.4 1.20 1.82

74.5 1.35 4.29

75.9 1.15 1.26

77.0 1.12 1.15

78.2 1.15 1.26

78.3 1.10 1.27

80.0 1.15 1.26

80.6 1.15 1.26

81.5 1.15 1.26

81.5 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

91.1 1.15 1.26

TR-1 Case 6/29/07

STA Depth Vel

* 82.5 0.6 1.26

{ 82.8 0.6 1.3

{ 84.3 0.6 1.6

85.2 0.6 1.6

90.3 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

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91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

91.6 0.6 1.6

Sultan R 10/19/67
Reach 3 Upper

	In	Out
Time	10:40	12:50
Sig	0.0	0.0

Crew: M. Gagner
T. Sullivan

Equip: Nikon Level
SW:

TR-6 WSE

10/19/67

STA	BS	HI	IS	Eleva	Rod
Rebar RWP	5.19			98.14	
		103.33			
(looking d/s) RWS			9.80	93.33	

unable to cross

Photo #1 - looking R → L
#2 " " d/s

TR-5 Pool

10/19/07

STA	BS	HT	FS	Eleva
-----	----	----	----	-------

BM-2 4.30

105.20

109.50

RWS

13.62 95.88

shot d/s ~ 20' from transect line

Photos

#3 Pool

RT → LT

4 "

d/s short distance

5 "

d/s long distance

6 "

looking u/s

TR-4

Rifle/control 10/19/07

STA	BS	HT	FS	Eleva
-----	----	----	----	-------

BM-1 4.18

100.00

104.18

BM-2

RWS

9.01

95.17

Photos

#7

Rifle/control

RT → LT

8

d/s

9

d/s

Right

10

d/s

Left

TR-3 Run

10/19/07

STA	BS	HI	IS	Elev
-----	----	----	----	------

HP-2 0.84

100.08

100.92

RWS

8.37

92.55

Photos

#11

R+ → L+

12

U/S

13

D/S

TR-2 w. de

R. 1/6

10/19/07

STA	BS	HI	IS	Elev
-----	----	----	----	------

BM

1.57

101.57

100.00

HP-2

1.40

LWS

5.20

96.37

M/RWS

5.19

96.38

Photos

14

L+ → R

15

U/S

16

D/S

TR-1 R3 Upper
Case

10/19/07

STA	BS	HI	FS	Elev
HP-1	2.11			99.38
		161.49		

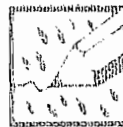
LWS			6.33	
-----	--	--	------	--

MWS			6.04	
-----	--	--	------	--

Photo

LH - RH

Sultan River
Reach 3 Lower



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

Sno Pod
Jackson Project

1628.02

1 of 2

1628.02.1004

6/26/07

Reach 3 Lower

Sultan River

Field Crews

Glin Anderson - Level
 Nico Romero - Rod
 Dudley Riser - HP & WP set
 Jesse Reynolds - HP & WP set

Time 11:09 am Start

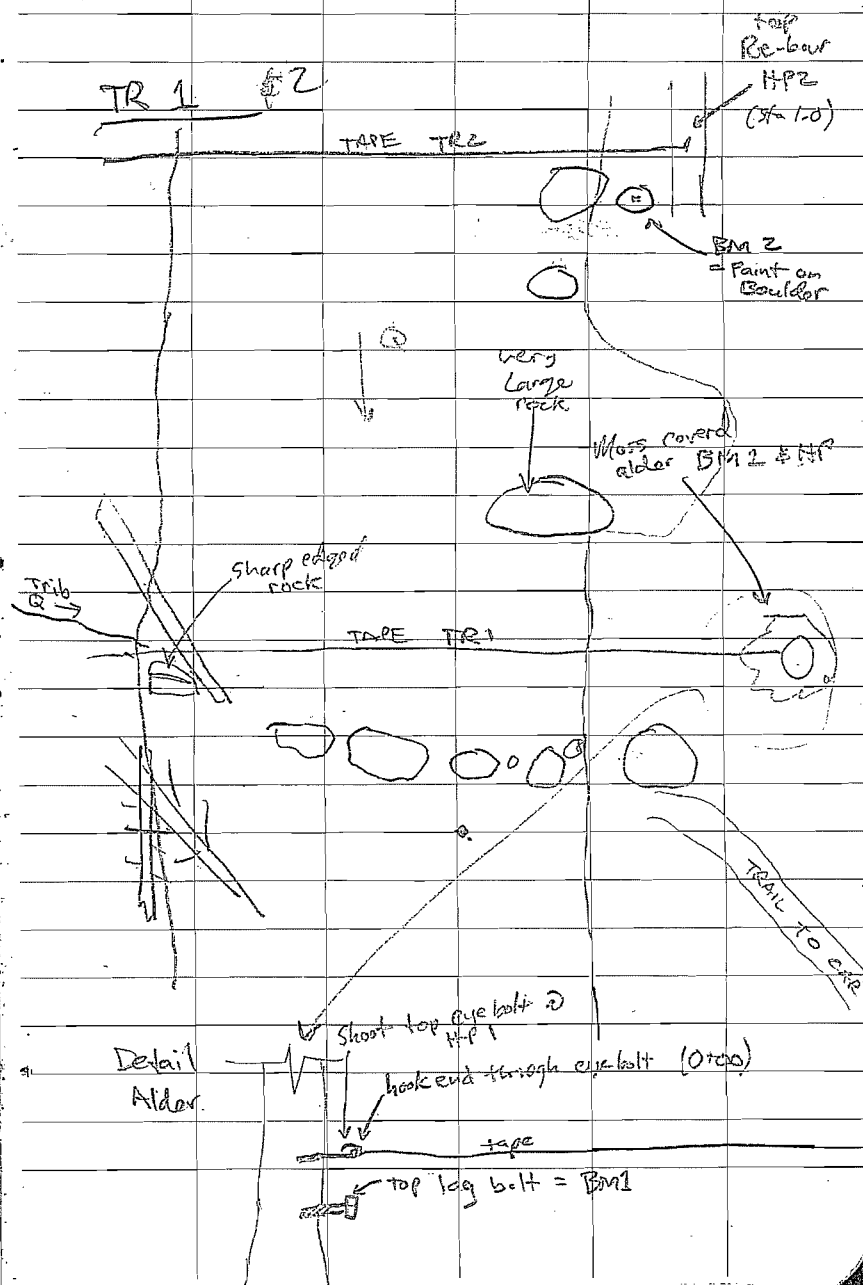
	IN	OUT
SG	4- $\frac{1}{16}$ "	4- $\frac{7}{16}$ "
TIME	11:20 am	5:50 pm

Level Loop TR1

STA	B _S	HI	FS	ELEV	
BM1	1.74	101.74		100.00	
HP1	1.02	101.80	0.96		+1.06
BM1			1.80		+1.06 ✓

Level Loop TR2

BM2	4.58	104.58		100.00	
HP2	4.67	104.56	4.69		-0.02
BM2			4.56		-0.02 ✓



6/26/07
Bank Survey

TR1

Reach 3

RT WP

127.6'

tied to nail

STA

BS

HE

FS

ELEV

SUBSTRATE

101.80

0' - LWP

4.09

12

1.1

4.66

21

5

5.27

12

9

7.63

21

13.1

7.80

54

17

6.32

84

23

7.55

45

27

7.81

23

32.8 LWE

8.87

47

-2'

3.31

12

-6'

2.11

1

-12'

0.81

1

99 RWE

6.93

82

105

6.90

34

112

5.22

56

103.6

7.03

82

117

4.60

67

120

6.10

87

124

5.30

35

127.6 RWP

4.7

21

143

2.3

12

Lower

- Sultan

River

in tree

%

NOTES

80

Base of Alder

55

55

Top of bank

55

Toe " "

70

90

Top Boulder

80

75

65

90

100

100

Slope continues up

90

top Boulder

50

60

90

edge boulder

55

55

60

80

55

TOE →

slopes up to 40% beyond this spot

Sultan River

TR 2

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>ELEV</u>	<u>SUB</u>	<u>%</u>	<u>Notes</u>
BMC	4.56	104.56					
-15			2.96		1	100	
-7			5.39		1	100	
-5			6.00		1	100	v/s edge Log
-3.7			2.30		1	100	TOP of Log
-1.5			6.44		18	100 65	D/S edge log
1' -LWP			4.92		18	70	Top of Log w/w.p.
11.8'			6.41		81	65	edge WP Log
5.5			7.08		81	60	
8			7.36		81	85	
12			8.59		81	80	
17			9.22		87	75	
85.5 97.5			9.2		801	70	top Rock
101			8.39		21	90	
107			6.98		21	90	
113			6.89		21	60	
120.8 -RWP			5.60				Could not read over
120			5.60		1	100	from Sta 120 7' @ 5% slope then 40% beyond that

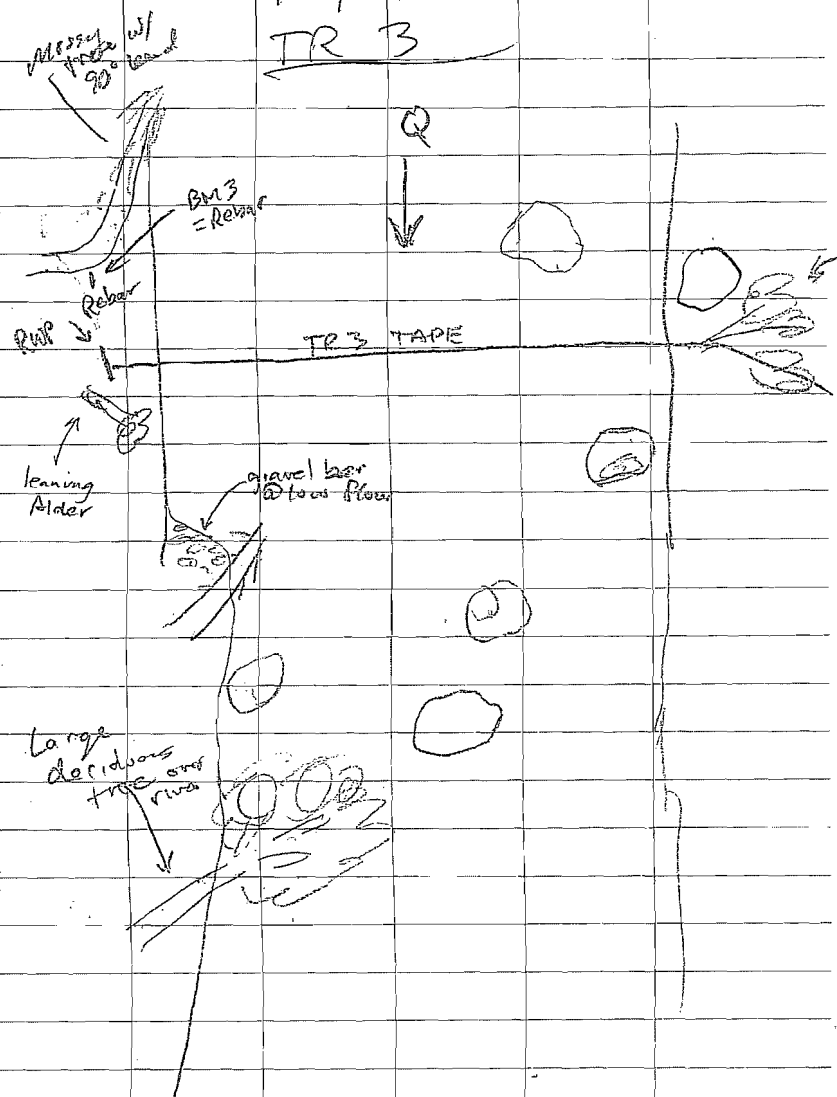
6/26/07

Reach 3

Lower

Sultan River

TR 3



Small alder

LWP in trunk (screw) = HP 3

@ STA 1.0'

TR 3 Level Loop

STA	BS	HI	FS	ELEV	
BM 3	1.35	101.35		100.00	
HP 3	2.52	101.33	2.55		-0.03
			1.33		-0.02 ✓

6/26/07

Reach 3

Lower Sultan River

Bank

Survey

TR3

STA	B>	HI	FS	EL	Sub
		101.33			
118.7'	-RWP		0.74		1
116			2.23		81
112			3.36		81
108			4.95		16
106.2			4.82		87
105.3	~		4.22		8
103.6			4.63		8
102.6			6.37		68
9.1			5.65		28
7			4.61		21
6.6			4.58		81
4			3.34		8
2.9			4.21		81
1.0 - LWP			4.03		1
-6			3.41		1
-12			2.85		1
-19			3.10		1

%	Notes	ext. grade
100	Base of RWP	↑
90	Slope continues beyond RWP	
85		
55		
70	edge boulder	
100	top "	
100	" "	
55	edge boulder ~ RWE	
70		
55		
55	edge boulder	
100	top boulder	
55	edge boulder	
100		
100		
100		
100		

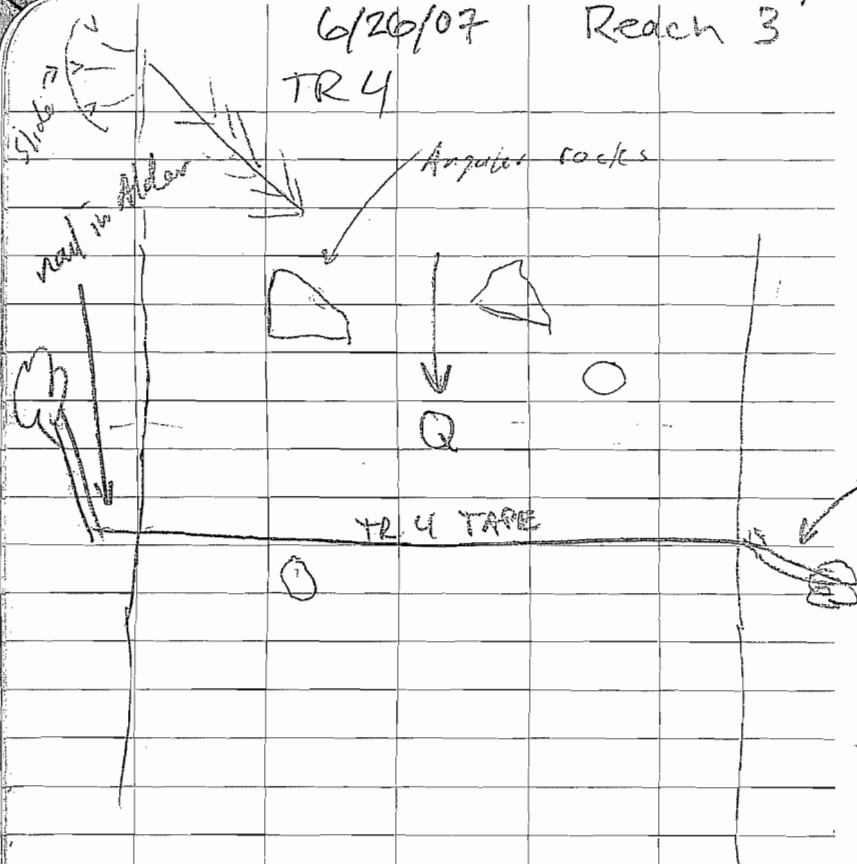
Continue slope for 12' (flat)
then goes up a
20% slope

6/26/07

Reach 3

Lower Sultan River

TR 4

LWP = HP 4 = Rebar @ base
of alderBM = screw (top) in
root wood of Alder

TR 4 LL

STA	BS	HI	FS	ELEV.	
BM 4	2.54			100.00	
HP 4	3.24	102.63	3.16		+0.08
BM 4			2.63		+0.09 ✓

6/26/07 Reach 3 Lower Sultan River
 Bank Survey TR 4
 HI = 102.63

STA	BS	HI	FS	EL	SUR
-10			1.92		1
-12			0.65		1
-7			1.95		1
-8			1.55		81
-6.3			3.50		18
1' WSP			4.82		1
5			5.65		21
8			6.25		21
9.4 NWE			8.66		18
113 ~WE			8.29		18
117			6.97		1
121			5.55		1
127.1 RWP			4.04		1
132			2.59		14
137			1.36		1

% Notes

100

100

100

90

80

100

80

60

80

55

100

100

100

~~100~~ 65

100

Slope continues up

edge boulder

top "

edge "

base of WP

RWP Base (offset 3' for shot)

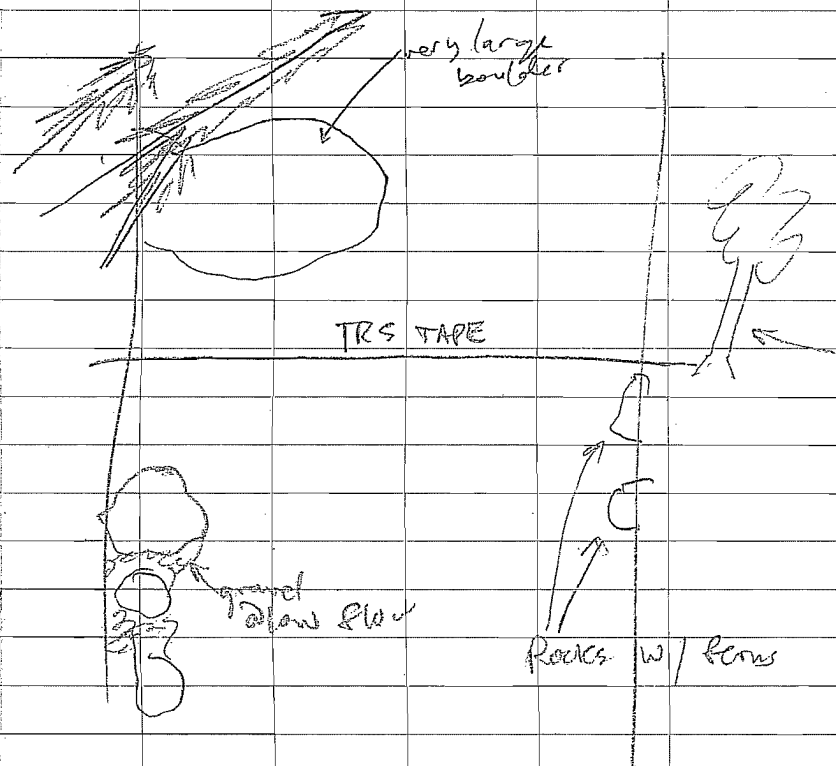
Slope

continues for 15'

more then increases

to 40%

6/26/07 Reach 3 Lower
TR 5



Sultan River

TR 5 Level Loop

STA	BS	HI	FS	EL	
BM 5	1.44	101.44		100.00	
HP 5	0.89	101.38	0.95		+ 0.06
BM 5			1.38		- 0.06

alder

HP 5 = Rebar in roots = LWP

BM = Root next to blaze /
w pink survey flag

6/26/07 Reach 3 Lower
Bank Survey TR 5

STA	BS	HI 101.38	FS	EL	Sub
1.0 LWP			1.69		18
-1			1.04		1
-3			0.25		1
1.9			2.03		81
2.5			1.60		81
4.2			3.78		18
6			4.14		81
8			5.59		18
11			6.86		18
13.5 ~LWE			7.50		21
103.7 -RWE			7.55		28
106.5			6.83		28
108.8			4.27		81
109.9 - RWP			3.99		18
115			1.72		81
117			0.35		81

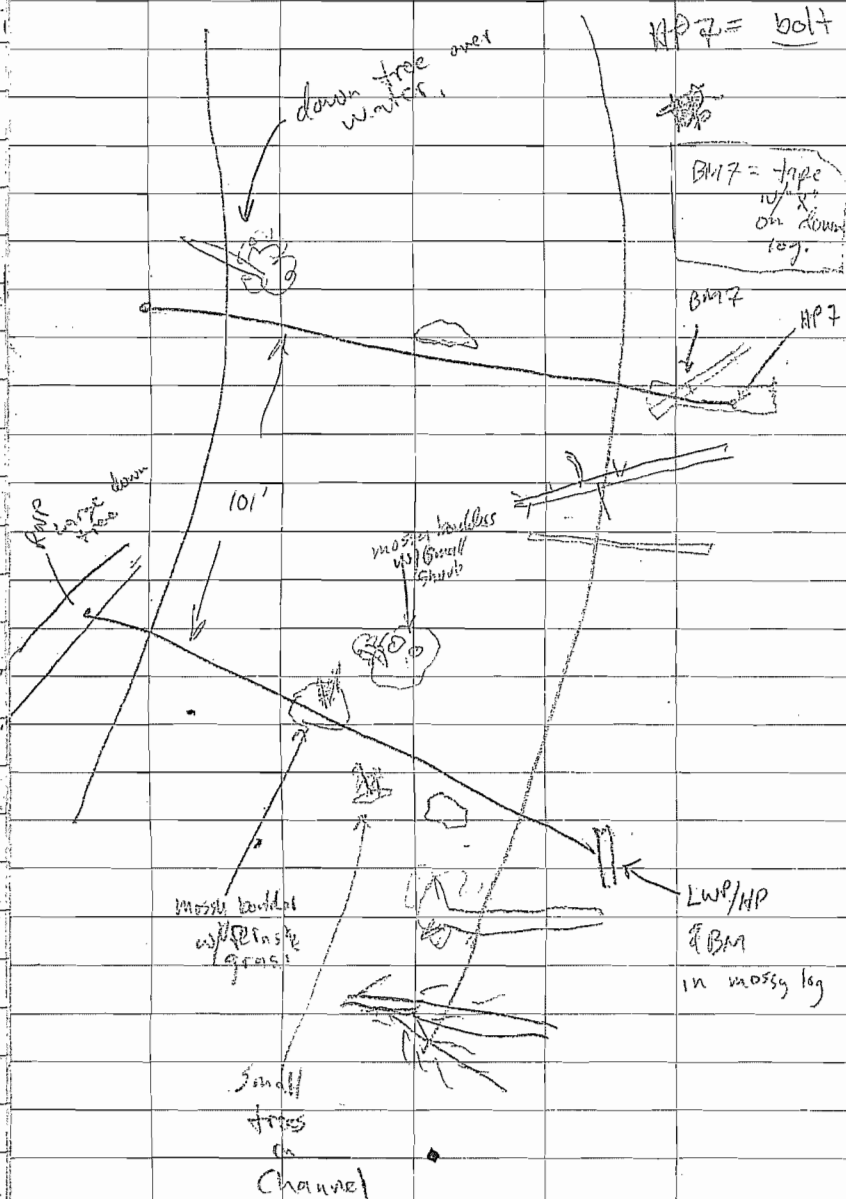
Sultan River

%	Notes
75	Base LWP
100	
100	slope continues to that
85	edge bolder
95	top "
55	edge "
60	
75	
70	
70	
75	
55	edge bolder
60	top bolder
70	Base RWP
70	
70	gradient continues for
	10' more, then
	increases to ~40-45%

6/26/07
TR 6 & 7

Reach 3

-



Lower Sultan River

down large
in log

TR 6 LL

STA	BS	HI	FS	EL
BM 6	4.25			100.00
HP 6	3.81	104.24	3.82	- .01
BM 6			4.24	- .01 ✓

BM 6 = nail in base of hemlock tree
HP 6 = screw in root of " "

TR 7	HI	FS
BM 7	104.24	
HP 7		

no TR 7 Level loop
taken. All shots
taken from TR 6
Setup.

6/26/07 Reach 3. Lower
Bank Survey TRL

Sultan River

STA	BS	HI	FS	EL	SUB
-4		104.24	3.44		18
-10			1.02		18
1	LWP		5.61		18
5			6.57		81
10			6.70		81
15			7.16		81
20			8.29		81
25			9.79		18
29 ~ LWE			11.29*		1
183.5 ~ RWE			11.80		83
192			11.50		65
198			10.74		23
205			10.20		28
210			10.17		21
215.5	RWP		8.65		12
217			5.35		1
218.5			8.50		21
224			6.69		1
235			3.15		1

%	Notes
55	
80	Continues to slope up
55	Base LWP - below root
60	
80	
85	
60	
70	
100	*(Red Sunk 0.25' in silt)
60	
55	
55	
60	
60	
60	Base RWP (edge log)
100	top of log
70	edge log
100	
100	

Slope beyond STA 235
~40%

6/26/07 Reach 3 Lower Sultan River

Bank Survey TR 7

<u>Sta</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>	<u>SUB</u>
		104.24			
145.0	~RWE		10.89		25
148			9.66		62
153			9.64		24
158			9.83		21
163			9.50		21
168			8.44		82
174.7	RWP		7.93		1
180			7.60		1
185			5.40		1
12	~LWE		11.00		34
9			9.68		21
1.0'	-LWP		9.24		15
-6'			7.20		1

<u>%</u>	<u>Notes</u>
55	
60	
70	
70	
85	
55	
100	Base RWP
100	
100	continue slope for 11' then slope ~40% beyond
60	
85	
60	Base HP & WP
100	continue slope ~25' more then 40%.

Reach 3 Lower 6/27/07
(Day 2) Low Flow

Field Crew

Glen Anderson

Nico Romero

Jesse Reynolds

	IN	OUT
Time	9am	6:15pm
SG	4-1/8"	4-1/16"

SG = metal ruler on rebar in pool
just D/S of TR 1

Weather: Sunny & Warm, NO Wind

TR 6		WSE	Survey		
STA	BS	HI	FS	ELEV	Depth
33' (LWSE)		104.09	10.95	93.14	0
72'			11.13		
142'			11.93		
180' (RWSE)			11.64		

96
45
141

104.09
10.95
93.14

6/27/07

Level Loop TR 6 & 7

STA	BS	HI	FS	EL	Δ
BM6	4.14	104.14		100.00	
HP6			3.71		
BM7			5.09		
HP7	6.45	104.09	6.50		-0.05
BM7			5.04		-0.05 ✓
<div>HP 7 = Rebar in log BM 7 = "X" on flagging around log</div>					
HP6			3.67		-0.05 ✓
BM6			4.69		-0.05 ✓

TR 7		WSE	Survey		
STA	BS	HI	FS	ELEV	Depth
143' (RWSE)		104.09	10.85		0
88' (CWSE)			10.85		
14' (LWSE)			10.88		

9
104.09
10.85
93.24

6/27/07

Low Flow

Level Loop TR 5

STA	BS	HI	FS	Elev	
BMS	1.10			100.00	
HPS	0.88	101.36	0.62		+ .26
BMS			1.36	100.00	+ .26 ✓

TR 5 WSE's

STA	BS	HI	FS	ELEV
		101.36		
RWE (102')			7.55	93.81
LWE (15')			7.55	

9¹⁰

101.36

- 7.55

93.81

Reach 3 Lower Sultan River

Level Loop TR 4 WSE's

STA	BS	HI	FS	Elev	
BM4	2.54	102.54		100.00	
HP4	3.13	102.52	3.15		-.02
BM4			2.52		-.02 ✓

113' RWE

8.26

15' LWE

8.25 94.27

102.52

8.25

94.27

6/27/07 Low Flow
TR 3 Level Loop @ WSE

STA	BS	HI	FS	Elev	
BM 3	3.14	103.14		100.00	
HP 3	4.31	103.11	4.34		-0.03 ✓
BM 3			3.11		-0.03 ✓

STA	DESC	HI	FS	EL	A
102'	RWSE	103.14	7.65	95.59	
13'	LWSE		7.45		
54'	CWSE		7.58		

9 12 11 10
103.14
7.65
95.59

Reach 3 Lower Sultan River

6/27/07

Low Flow

TR 3

D&V

Swoffer	5750
prop.	GA
cal	167

LWP @ Sta 1.0

STA	D	V	SUB	%	Cover
9' LWE	0	0	32	55	2
14	0.28	0.33	85	80	2
15.7	0.45	0.05	86	60	2
17	-1.5'	-	8	100	-
18.2	0.60	0.03	87	70	-
20	0.65	0.20	87	75	-
25	0.76	0.0 / 0.66	86	75	-
26.6	0.97	0.15	85	75	-
26.5	-0.2	-	8	100	-
27.5	0.88	0.42	68	55	-
33	0.86	1.25	83	55	-
34.4	0.9	0.63	83	60	-
38	-1.0	-	8	100	-
40.8	1.28	0.89	87	70	-
45	0.85	0.70	76	80	-
46.4	0.7	0.90	83	76	-
48	-0.9	-	8	100	-
49.5	0.65	0.48	38	60	-
52	0.65	1.37	84	60	-
55.1	0.95	1.16	78	65	-
56.2	-1.2'	-	8	100	-
59.4	0.95	1.44	86	60	-
61	0.75	1.11	85	65	-

Reach 3 Lower Saltan River

Angle

Notes

edge bld.

top bld.

edge bld.

edge bld.

top bld.

edge bld.

30° V

15° V

edge bld.

top bld.

15° V

edge bld.

25° V

40° V

edge b.

top b.

15° V

edge v.

edge b

top b

edge b

30° V

6/27/07 TR 3

LOW FLOW

Swafford 5750
prop #6A
Cal 167

STA	D	V	SUB	%	Cover
62.8	0.98	0.16	78	60	—
64.5	-1.7	—	8	100	—
65	0.77	0.34	85	70	—
67	1.20	2.16	78	55	—
73	0.55	1.66	87	70	—
78	0.85	0.14	68	60	—
83	1.58	1.10	87	85	—
88	0.35	2.96	86	60	2
93	0.68	0.42	87	65	2
98	0.40	1.25	56	55	2
103	0.70	0.07	65	55	2
103.4	0.78	0	68	60	2

Angle

35°

20°

30°

40°

—

—

70°

45°

—

—

—

edge boulder

6/27/07 TR 2 LOW
 Level Loop & WSE's

STA	BS	HI	FS	EC
B.M.	4.74	104.74		100.00
HP2	4.83	104.73	4.85	- .02
			4.73	- .01 ✓

WSE' Survey TR 2

STA	Location	HI	FS	Depth	ELEV.
		104.73			
16.9'	LWSE		9.95	Ø	94.78
51'	CWSE		9.95		
92'	RWSE		9.72		

~~HP~~

9.13 16
 104.73
 - 9.95
 94.78

Reach 3 Lower Sultan River

6/27/07
Level Loop

TR 1
WSE's

LOW

STA	BS	HI	FS	EL	
BM1	2.20	102.20		100.00	
HP1	1.37	102.14	1.43		-.06
BM1			2.14		-.06 ✓
38'	LWSE		9.41		92.73
67'	CWSE		9.29		
98'	RWSE		9.33		

102.14
9.41
92.73

Reach 3 Lower Sultan River
TR 1 & 2
Spawning Gravels

TR 2

from sta. 45-55

(gravel bar extends for
~50' ups & 50' d/s of
transect, approx. 10'
wide of usable gravel)

TR 1

from sta 19-32

gravels out of water @ Low
flow. & size could be used for spawning

from sta 53-76

- gravels from too large to
too small, could be used
for spawning

6/28/07 Reach 3 Lower Sultan
Day 3 mid Flow

Crew
Nico
Glen
Jesse

Weather: Partly Sunny, wind, Skewed forest

	IN	OUT	3pm
SG	15 15/16"	16 1/4"	16"
Time	8:40am	5pm	3pm

IR 1 Level Loop & WSE

BM1	1.87	101.87	100.00	
HP1	1.07	101.84	1.10	-03
BM1			1.84	-03 ✓
30'	LWSE		8.13	93.71
67'	CWSE		8.07	93.77
98'	RWSE		8.19	

101.84
8.13
93.71

101.84
8.07
93.77

Note: HE taken from BM - FS
may be better to use calc
off of HP. (0.01' difference)?

104.49

- 9.01

95.48

104.49

8.89

95.60

TR 2 Level Loop & WSE

STA	BS	HE	FS	EL
BM2	4.53	104.53		100.00
HP2	4.60	104.49	4.63	-03
BM2			4.49	-04 ✓
17'	LWSE		9.01	95.48
51'	CWSE		9.03	95.46
92'	RWSE		8.89	95.60

6/28/07

Mid Flow

Reach 3 Lower
Sultan

TR 3 Level Loop & WSE's

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>	<u>Δ</u>
HP3	2.93	101.73			
BM3	1.78	101.78	1.73		+ .05
HP3			2.98		+ .05 ✓
8'	LWSE		5.52	96.26	
54'	CWSE		5.68		
103'	RWSE		5.78		

HP3 = screw in alder

RWP (TBP Rebar)

0.51

1.23

101.78

5.52

96.26

6/28/07 Mid Flow

TR 4 Level Loop & WSE's

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>
BM4	2.30	102.30		100.00
HP4	2.88	102.27	2.91	- .03
BM4			2.27	- .03

LWSE* (10') 7.24 95.03

* flat water so only took 1 WSE shot

102.27

7.24

95.03

Reach 3 Lower Sultan River

TR 5 Level Loop & WSE's

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>
BM5	1.565	101.57		100.00
HP5	1.07	101.55	1.085	- .015
BM5			1.55	- .015

LWSE* 6.67 94.88

910.14
101.55

6.67

94.88

6/28/07 TR6 ~~LOD~~
MID

TR6⁶⁷ Level Loop EWSSE'S

STA	BS	HI	FS	FLEV
BM6	4.12	104.12		100.00
HP6			3.69	
BM7			5.06	
HP7	6.30	103.81	6.46	-1.6
BM7			4.90	-1.6
HP6			3.53	-1.6
BM6			3.96	-1.6

TR6 W.S.E'S

STA			FS	
29'	LWSE	103.96	10.36	93.60
72'			10.59	
142'			11.11	
184	RWSE		11.05	

103.96
10.36
93.60

(1.91) 6/28/07 TR7 MID
Reach 3 Lower Sultan River

TR7 W.S.E'S

STA		HI	FS
145'	RWSE	103.96	10.10
88'	CWSE		10.14
12'	LWSE		10.21

103.96
10.10
93.86

TR 7	MID	P.W	6/28/07
STA	D	Reach 3	Sultan
	✓	Lower	Comments
		Cover	
10.8 (WE)	0.1	⊖	8
12	0.60	0.06	8
18.6	1.10	1.30	— 70°
22.2	1.70	0.03	— 45°
26	1.80	0.34	30°
28.2	1.72	0.78	5°
33.1	1.55	0.89	
37.1	2.32	0.45	
39.0	2.90	0.53 0.66	
46.0	3.05	1.02 1.21	
50	3.52	0.40 0.39	
56	2.75	0.80 0.50	20°
62	2.20	1.06	
68	1.92	0.24	
74.5	1.70	0.87	
79.7	2.92	0.93/1.00	5°
85	2.42	0.75	10°
89.7	2.05	0.16	10°
97.3	1.31	1.60	
103	1.48	1.40	5°
109	2.35	0.19	
115	2.00	0.51	
118	2.12	0.43	

Meter ~~4~~ 57.50
 prop. 6A
 Cal. 167

TR 7	MID
top Boulder	Sta
0	STA 0
0.6	29 0
1.1	20 - .50
0.98	
1.2	
1.0	
1.73	
2.3	
2.7	
3.0	
2.05	
1.60	
1.95	
1.1	
2.45	
1.9	
1.5	
0.6	
0.9	
1.7	
1.35	
1.5	

TR7 MID FLOW
 Reach 3 Lower Soltan

STA	D	V	Cover	Comments
121	1.90	0.19		
129	1.15	0.91		10°
135	1.65	0.57		10°
142	1.35	0.79		
143.3	0.95	0.81		
146.1	0	0		RWE

Meter	5750
Prop	GA
Cal.	167

1.3
 .55
 .9
 .7
 0.4
 0

6/29/07 DAY 3 High

Crew
Jesse
Nico
Glen

	IN	OUT	MID
SG	23 ¹⁵ / ₁₆ "	24 ¹ / ₁₆ "	24.75"
Time	8:30am	6:30pm	4:44pm

Weather

Partly Sunny, no wind
Showers Forecast

Reach 3 Lower Sultan River
TR 6 & 7 Level Loop & WSE

STA	BS	HI	FS	EL
BMC	4.03	104.03		100.00
HPG			3.60	
HP7			6.38	
BMT7	4.94	104.00	4.97	-0.03 ✓
HP7			6.35	-0.03 ✓
HPG			3.57	-0.03 ✓
BMC			4.00	-0.03 ✓

TR 7 LWSF	9.85	94.15
TR 7 RWSF @ 100' u/s	9.60	
TR 7 RWSF	9.78	
TR 7 RWSF @ 50' d/s	9.98	
TR 6 RWSF 184'	10.76	
142'	10.80	
72'	10.45	
29'	10.09	
TR 6 RWSF @ 100' d/s	13.04	

Dist Between TR 6 & 7
R-Bank 101'

6/29/07

High

Day 3

Reach 3

Lower

Sultan

River

TR 5

Level

Loop

& WSE's

STA

BS

HI

FS

EL

BMS

1.55

101.95

100.00

HPS

0.89

101.38

1.07

- .18

BMS

1.38

- .17

LWSE

5.72

95.66

RWSE

5.74

95.64

RWSE

100' D/S

5.85

TP 1

1.07

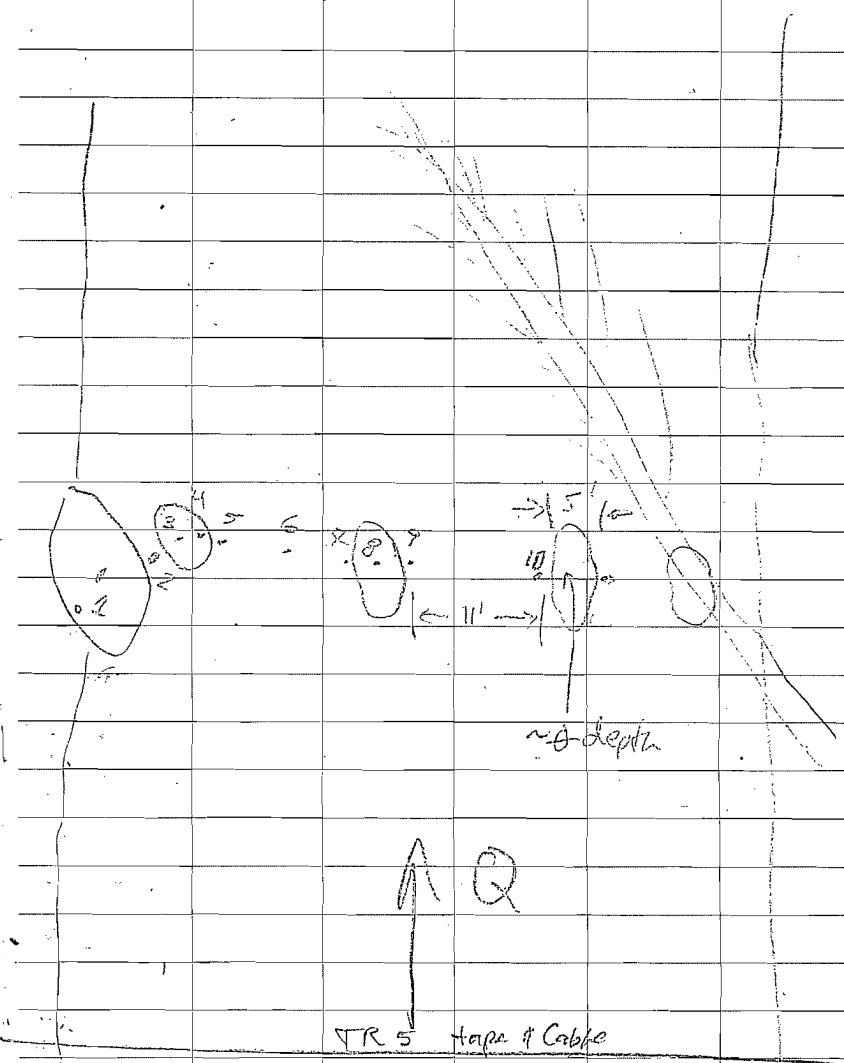
$$\begin{array}{r}
 4.10 \\
 101.38 \\
 \hline
 5.72 \\
 \hline
 95.66
 \end{array}$$

Pool Control Reach 3 - Lower Sultan River

TR 5 - Control Survey

STA	#	101.38
0	1	1.41
+6.4	2	7.55
+2	3	6.40
+3	4	6.50
+5	5	8.26
+5	6	7.51
+3.5	7	7.57
+2	8	6.13
+3	9	11.06
+11	10	0 depth (5' wide edge boulder)
+5	11	10.70 0 depth
+1	12	10.70
+10	13	11.19
+1	14	6.65
+2	16	7.06
+2	17	9.35
+13	18	6.42
	19	5.81 (rwsc)

→ slope
contours
50'



6/29/07 High
TR 4 Level Loop & WSE's

STA	BS	HI	FS	ELEV
BMS	2.41			100.00
HPS	3.05	102.44	3.02	+
BMS			2.44	
11'	WSE		6.89	95.55
11 1/2'	RWSE		6.89	
	RWSE @ 100' D/S		6.87	
	RWSE @ 100' D/S		6.95	

9.11.15
102.44
6.89

95.55

Reach 3 Lower Sultan River

6/27/07 Hinds

TR 3 Level Loop & WSE's

STA	BS	HI	FS	EL
BM3	3.14	103.14		100.00
HP3	4.32		4.34	-0.02 ✓
BM3			3.12	-0.02 ✓

103.14

54'	LOSE		6.39	
54'	CLOSE		6.73	
107'	RISE		6.82	6.32
	RISE	2100'0	8.31	
	2100'44	5.57		

6.12
103.14

6.82

96.32

Reach 3 Lower Sultan River

(Δ=1.20')

5.13

1

6/27/07

Lign

TR 2 Level Loop & WSE's

STA	AD	HZ	EL	FLSD
RM2	4.57	104.59		100.00
BH2	4.60	104.56	4.67	
DM2			4.56	

12'	1.051	2.34
51'	0.55	8.32
	0.496	

10.5
8.71
19.21

Reach 3 Lower Sultan River

85.10 1.11

6/27/07 High

TR 1

Low Loop & WSE

STA	BS	HI FS	FS FS	EL
BMI	1.95			100.00
HP1	1.09		1.17	-1.08
BMI			1.87	-1.08

23' LWSE 7.53

LWSE 35' 0/5 7.83

LWSE 60' 4/5 7.33

Reach 3 Lower Sultan River

sta	6/29/02	High	TR1	Reach 3
	Δ	∇	Constant	Lower Sutton
LWP	0.00			
LWE9.0	0.19	0		
29.1	0.65	1.26	30° angle	
32	1.29	0.70		
33.5	1.45	1.08		
34.2	1.85	1.25		
36	1.00	1.30		
37.4	3.00	0.56		
40.5	2.75	1.03	20° angle	
43.6	2.50	2.74	20° angle	
46.7	2.60	2.70	20° angle	
49.6	2.60	0.43		
52.6	3.00	2.09		
55.6	2.70	3.47	10° angle	
58.6	2.10	3.42		
61.6	1.90	3.05		
64.6	1.75	2.44		
67.6	2.00	2.38	15° angle	
70.6	2.55	2.30	10° angle	
73.6	3.00	2.26		
78	2.50	2.20		
81	-	-	unwadeable	
84	-	-	unwadeable	
87	3.45	2.40		
91	2.75	1.6		

5750
6A
167

0
0.55
0.7
1.1
0.3
2.25
2.05
1.75
1.25
1.8
2.25
2.0
1.40
1.35
1.1
1.3
1.9
2.25
1.8
2.65
3.2
2.7
2.05

6/29/07

TR1

High Flow

Reach 3 Lower Sultan.

Sta

D

V

95

2.60

1.89

97

1.80

2.67

Run 8.6

1.80

2.25

1

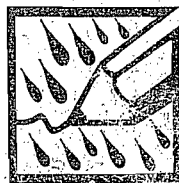
~~Run~~

2.05

0.9

1.1

Sultan River
Reach 3 Lower



"Rite in the Rain"

ALL-WEATHER

LEVEL

No. 311

Sno Pod

Jackson Project

1628.02

2 of 2

2	Rwp 145	Rwp 174.7			
Sutton	Lower Reach #3	Transect #7			
STA	Depth	Velocity	Substr	Cover	%
Lwp 1.0	Ø	Ø	23	2	55
Lwp 12.0	Ø	Ø		2	
18.6	0.60	0.28	28	-	60%
22.2	1.10	Ø	87	-	90%
26.0	0.98	0.08/0.14	86	-	90%
28.2	1.20	0.12	86	-	95%
33.1	1.00	0.35	86	-	95%
37.1	1.73	0.21	86	-	95%
39.0	2.30	0.26	82	-	60%
46.0	2.70	0.04/0.52	28	-	75%
50.0	3.00	0.23/0.08	82	-	65%
56.0	2.05	0.32	26	-	60%
62.0	1.60	0.35	84	-	80%
68.0	1.45	0.17	84	-	60%
74.5	1.10	0.57	48	-	70%
79.3	2.45	0.56	8	-	100%
85.0	1.90	0.60	32	-	55%
89.7	1.50	0.09	36	-	60%
97.3	0.60	0.43	87	-	90%
103.0	0.90	0.51	85	-	65%
109.0	1.70	0.20	87	-	60%
115.0	1.35	0.09	56	-	55%
118.0	1.50	0.44	82	-	60%
121.0	1.30	Ø	82	-	60%

Swoffer 4079
Prop 48
Cal 125



3
06/27/07

Angle	Comments
↖	Edge of Bld (left) / 0.9 ft above surface
	Right edge of Bld. / u/s Bld velocity break
	u/s velocity break
	Left edge of Bld / 0.6 ft above surface
↖	Right edge of Bld
	Left edge of Bld ?
	u/s Bld velocity break
↖	u/s Bld velocity break
↖	
↖	u/s Bld velocity break
↖	Left edge of Bld / 0.3 ft above surface
↖	
	Left edge of Bld / cell consist of two adjacent
↖	Right edge of Bld Blders
↖	
↗ 45°	
↖ 30°	u/s Bld velocity break
	u/s Bld velocity break

Sultan R. - lower Reach #3 - Truss #7

STA	Depth	Velocity	Substr	Cover	% Dam
129.0	0.55	0.29	28	-	55%
135.0	0.90	0.23	82	-	55%
142.0	0.70	0.12	83	-	70%
143.3	0.04	0.09	85	-	80%
RWE 145.0	Ø	Ø			
RWP 174.7					

06/27/07

Control

Angle

Comments

A 10°

6 Sultan R. / Lower Reach #3 / Transect #6 06/27/07					
STA	Depth	Velocity	Substrate	Cause	% Dam
LWP1.0	-	-			
LWE 28.9	0.10	Ø	1 2	2	80%
31.0	0.40	0.23	21	2	65%
33.1	1.15	0.23	8	-	100%
38.5	1.00	0.18	87	-	85%
45.1	0.55	0.57	86	-	85%
51.1	1.80	0.36	87	-	70%
58.1	2.10	0.17	82	4	75%
64.7	1.30	1.22	86	4	90%
67.4	0.85	0.90	86	-	80%
71.7	0.90	1.11	85	-	70%
74.9	0.70	0.05	86	-	80%
79.7	0.50	0.35	86	-	85%
82.2	0.50	1.86	86	-	90%
88.3	0.60	0.35	86	-	90%
92.0	0.50	3.43	86	-	90%
95.3	0.60	0.09	82	-	70%
105.1	0.60	0.86	8	-	100%
108.9	0.55	1.61	48	-	55%
118.2	0.10	Ø	84	-	60%
122.5	0.50	0.46	75	-	55%
134.9	0.20	0.54	46	-	55%
145.4	0.30	1.01	86	-	60%
155.1	0.30	1.75	58	-	55%

Surface 4090 Prop 4B Cat 125		7			
Angle	Comments				
-	-				
	Left edge of Bld / 0.10 ft above surface				
40° R	Right edge of Bld				
10° A	Taken on top of submerged Bld.				
10° A	Taken on top of submerged Bld.				
5° A					
45° A					
30° A	U/S Bld Velocity Block				
40° A					
	Left edge of Bld / adjacent Bld's				
	Right edge of Bld / 0.20 ft above surface				
25° A	Left edge of Bld				
	Right edge of Bld				
10° A	Taken in chute between 2 submerged Bld's				
	Left edge of Bld / 3.2 ft above H ₂ O surface				
	Right edge of Bld				
	Left edge of Bld Bar (clump)				
	Right edge of Bld Bar (clump)				
85° →					
	Taken on top of submerged Bld				
	Taken on top of submerged Bld.				

Sutton & Lower Reach #3 / Transsect #6 Contd. 06/27/07

STA	Depth	Velocity	Substrate	Cover	% Dom
161.5	0.80	1.64	86	-	70%
170.5	1.00	0.45	83	-	80%
171.9	0.70	0	83	-	90%
177.7	0.30	0.53	86	-	85%
179.7	0.50	0.83	84	-	75%
182.6	0.10	0	8	-	100%
183.5 R ₂	0.10	0	82	4	65%

RUP 215.5

Angle Comments

25° R

Left edge Bldr clump (1.10 ft above surface)

Right edge of Bldr clump

Left edge of Bldr 0.60 ft above surface

Right edge of Bldr

STA	Depth	Velocity	Substrate	Cover	% Dam
10 Sutton R. / Lower Reach #3 / Transect #4					06/27/07
LWP 1.0	-				
LWE 9.6	0.30	Ø	24	2	90%
14.0	0.10	Ø	23	8	95%
19.0	0.30	0.06	56	-	55%
23.0	0.20	0.06	56	-	60%
27.0	0.80	0.04	26	-	80%
31.0	1.35	0.06	23	-	25%
35.0	1.82	0.06	23	-	95%
39.0	1.85	0.18	27	-	90%
43.0	1.80	0.16	67	-	55%
47.0	1.55	0.17	75	-	60%
51.0	1.80	0.21	65	-	55%
55.0	2.30	0.24	24	-	60%
59.0	2.80	0.22/0.23	23	-	70%
61.0	3.05	0.26/0.21	24	-	60%
65.0	3.55	0.28/0.31	24	-	70%
76.0	4.20	0.24/0.37	87	-	75%
81.0	2.00	0.22	8	-	100%
86.0	1.90	0.13	87	-	90%
91.0	1.35	0.08	21	-	60%
96.0	2.00	0.02	12	-	70%
101.0	2.00	0.62	18	-	60%
106.0	1.90	Ø	81	-	70%
111.0	0.90	Ø	81	-	60%
112.8 BWE	Ø	Ø	18	-	70%
127.1 RWP					

Swatlow 4049
Prop UB
Cal 125

11

Angle

Corr. 85

Est. flow

Estimated Flow

Unable to collect flow @ ^{Station} 70.0 ft due to unwadeable depth

Est. flow

Sultan R. / Lower Reach #3 / Transect #2 06/27/07

STA	Depth	Velocity	Substrate	Cover	% sub
76.5	0	0	8	-	100%
79.1	0.10	1.42	8	-	100%
80.8	0.35	0.75	8, 6	-	80%
83.1	1.20	0.18	8, 5	-	75%
87.3	1.30	2.02	4, 6	-	60%
90.6	1.55	0.86 / 2.08	8, 4	-	55%
93.2	0.60	0.75	8, 2	-	55%
95.9	1.00	0.03	2, 8	-	70%
97.8 ^{RWE}	0.70	0.01	2, 8	-	95%
120.8 Rwp					

Angle

Comments

Top of Bldr (1.0ft above surface)

Right edge of Bldr

10°

Measurement taken on top of Bldr

Est. Velocity

Est Velocity

STA	Depth	Velocity	Substrate	Count	% Don
16					
Sultan R. / Lower Reach #3 / Transect 4/					26/27/07
Wp 0.0	-	-			
33.5 LWE	0	0			
34.2	0.10	0.40	143	-	55%
36.0	0	0	8	-	100%
37.4	1.20	0	8.7	-	70%
40.5	1.20	0.32	8.4	-	75%
43.6	0.70	2.65	4.5	-	55%
46.7	1.00	1.66	8.5	-	65%
49.6	1.00	0.76	2.3	-	55%
52.6	1.20	1.33	2.3	-	55%
55.6	1.00	1.34	5.6	-	60%
58.6	0.50	1.27	3.4		55%
61.6	0.30	0.90	3.2		70%
64.6	0.15	0.66	3.2	-	60
67.6	0.30	1.48	3.4		65
70.6	0.85	1.39	3.6		60
73.6	1.30	1.39	3.6		55
78	0.80	0.82	5.6		55
81	1.72	0.14	8.2		60
84	2.20	0.10	8.6		70
87	1.70	0.76	8.6		65
91	1.20	0	8.6		60
95	1.1	0.40	4.2		60
97	0.55	0	3.4		55
98.5 ^{RWE}	0.35	0	3.4		55

Swaffer
prop # 4B
cal 125

Angle Gunm. 5

- Left edge of Bld.

- Top of Bld. (0.9 ft above the surface)

Right edge of Bld. / u/s Bld. velocity break

45° R u/s Bld. velocity break

5° R

10° R Spawning gravel present

25° R Spawning gravel present

20° R Spawning gravel present

20° R Spawning gravel present

35°

30°

End spawn gravels

5° Top boulder

Boulder vel. break (sta 89-93.5)

Sultan R / Lower Reach #3 / Transect #1 06-28-07

STA	Depth	Velocity	Comments
LWF 0.0	-	-	
LWF 29.1	0	0	
32.0	0.55	1.21	
33.5	0.70	1.16	
34.2	1.10	1.39	Left edge of Bld
36.0	0.30	1.88	Top of Bld
37.4	2.25	0.76	Right edge of Bld
40.5	2.05	0.49	Switched to #5750 / Prop #6A / Col 167
43.6	1.75	2.31	
46.7	1.75	1.19	
49.6	1.90	0.63	
52.6	2.25	1.67	40° angle
55.6	2.00	2.31	30° angle
58.6	1.40	2.30	10° angle
61.6	1.35	1.64	
64.6	1.10	2.28	
67.6	1.30	2.47	10° angle
70.6	1.90	2.39	5° angle
73.6	2.25	2.33	
78.0	1.80	1.65	
81.0	2.65	0.69 / 0.15	
84.0	3.20	1.02 / 1.00	5° angle
87.0	2.70	1.07 / 1.10	15° angle
91.0	2.05	0.05	up Bld dock 47 bridge

Swoffer 4099
Prop # 4A
Cal. 17.5

Lower Reach #3 / Transect #1 / Cont'd

STA	Depth	Velocity	Comments
95.0	2.05	0.38	
97.0	0.90	1.19	
98.6 LWF	1.10	0.24	

* Lost Prop unable to relocate

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Lower Reach #3

Sullivan R. / Transect #2 2/06/20/07

STA	Depth	Velocity	Comments
LWP 1.0			
LWE 16.7	Ø	Ø	
17.1	0.80	Ø	u/s Blat velocity break
21.0	1.00	0.01	u/s Blat velocity break
25.0	1.30	0.71	
28.0	1.70	1.55	
30.5	2.00	2.68	5° angle
33.0	2.10	1.87	10° angle
36.0	1.65	1.90	
39.0	0.90	1.23	
41.7	0.75	0.71	
44.7	0.55	2.49	10° angle
47.7	0.70	2.63	30° angle
48.2	0.70	2.99	10° angle
49.3	0.20	2.78	Top of Blat
51.4	1.10	3.03	
54.0	1.05	2.53	
57.0	1.55	2.01	
60.0	1.20	2.77	
62.7	1.60	0.92	u/s Blat velocity break
66.8	1.30	1.69	
69.0	1.10	0.51	u/s Blat velocity break
69.7	0.40	0.49	" " " "
70.4	1.40	0.48	" " " "

21

Lower Reach #3 Transect #2 Control

STA	Depth	Veloc	Comments
75.3	0.80	0.49	
76.5	Ø	Ø	0.25H above surface (Blat)
79.1	0.75	2.39	
80.8	1.00	0.55	45° angle
83.1	1.70	0.95	
87.3	1.85	3.29	
90.6	2.20	1.97	
93.2	1.20	0.59	
95.9	1.50	Ø	back eddy
97.8	0.20	0.58	
LWE 99.6	Ø	Ø	Neg cosoc

Swallow = 0.750

Prop = 6A

Cal = 1.67

Sultan R. / Lower Beach #3 / Transect #3 06/28/07

STA	Depth	Velocity	Comments
Low E 8.1	Ø	Ø	Very close
12.0	0.60 (0.0)	0.06	
14.0	0.80 (0.20)	1.37	
15.7	1.10 (0.45)	0.14	Left edge of Bldr
17.0	0.10 (-1.5)	Ø	Top of Bldr
18.2	1.10 (6.6)	0.11	Right edge of Bldr
20.0	1.30 (0.65)	1.67	
25.0	1.50 (0.70)	1.25	
25.6	1.52 (0.7)	0.49	Left edge of Bldr
26.5	0.50 (0.2)	1.28	Top of Bldr
27.5	1.40 (0.62)	1.40	Right edge of Bldr
33.0	1.50 (0.80)	1.61	
34.4	1.52 (0.70)	1.63	Left edge of Bldr
38.0	0.90 (-1.0)	0.26	Top of Bldr
40.8	1.85 (1.20)	2.60	Right edge of Bldr
45.0	1.48 (0.85)	1.62	
46.4	1.35 (0.70)	2.76	Left edge of Bldr
46.0	-0.20 (-0.9)	Ø	Top of Bldr
49.5	1.25 (0.65)	0.30	Right edge of Bldr
52.0	1.10 (0.55)	2.07	
56.1	1.55 (0.95)	2.16	Left edge of Bldr
56.2	-0.90 (-1.2)	Ø	Top of Bldr
59.4	1.45 (0.85)	2.81	Right edge of Bldr
61.0	1.25 (0.75)	2.99	

Sultan R. / Lower Beach #3 / Transect #3 cont'd

STA	Depth	Velocity	Comments
62.8	1.35 (0.70)	0.86	Left edge of Bldr
64.5	-1.0 (-2.0)	Ø	Top of Bldr
65.0	1.40 (0.70)	0.84	Right edge of Bldr
67.0	1.75 (1.2)	2.12	
73.0	1.18 (0.55)	0.56	
76.0	1.45 (0.85)	0.35	
83.0	2.00 (1.00)	1.30	
88.0	1.00 (0.35)	1.75	
93.0	1.30 (0.60)	2.00	
98.0	1.00 (0.40)	2.78	
103.0	1.20 (0.70)	0.12	
103.4	1.20 (0.70)	0.18	
103.8 RWE	1.20	0.12	

Swallow 5750

Prop = 6A

Cal = 167

Sultan R

/Lower Reach #3/Transect #4

06/28/06

STA	Depth	Velocity	Comments
Lwe 9.5	0.55	Ø	over hanging veg. cover
9.6 (0.7)	0.55	Ø	" "
14.0 (0.10)	0.83	Ø	
19.0 (0.30)	1.00	0.49	
23.0 (0.21)	1.00	0.67	
27.0 (0.80)	1.55	0.49	
31.0 (1.35)	2.13	0.45	
35.0 (4.60)	2.55	0.58 / 0.63	
39.0 (1.85)	2.55	0.59 / 0.72	
43.0 (1.80)	2.60	0.48 / 0.68	
47.0 (1.55)	2.30	0.54	
51.0 (1.80)	2.60	0.62 / 0.61	
55.0 (2.30)	3.15	0.75 / 0.65	
59.0 (2.80)	3.60	0.46 / 0.85	
61.0 (3.05)	3.85	1.10 / 0.72	
65.0 (3.55)	3.85		Unable to measure, unv
71.0 (4.20)			" " " "
81.0 (2.00)	2.75	0.63 / 0.70	
86.0 (1.90)	2.70	0.14 / 0.16	
91.0 (1.35)	2.15	0.15	
96.0 (2.00)	2.80	0.14 / 0.16	
101.0 (2.00)	3.00	0.12 / 0.15	
106.0 (1.90)	2.43	0.16	
111.0 (0.90)	1.90	Ø	

9500	64
50	167

Lower Reach #3 / Transect #

4 confuc

9500	64
50	167

1

<u>STA</u>	<u>Depth</u>	<u>Velocity</u>	<u>Comments</u>
112.8 (6.0)	1.10	0	
115.8	0	0	6.05. 1000

26 Sultan R./Lower Ranch #3/Transod #5 OG-28-07

STA	Depth	Velocity	Substr	Cover	% Dam
11.3	0	0	18	2	65
16	2.2	0	18	2	80%
20	3.05	0.06	1	—	100%
25	3.2	0.2	1	—	100%
30	3.5	0.32	1	—	100%
35	4.4	0.17	1	—	100
40	5.1	0.13	26	—	85
45	5.0	0.59	78	—	60
50	6.5	1.03	2	—	100
55	8.5	0.54	47	—	55
60	UKN	1.04	UKN	—	UKN
65	UKN	0.7	UKN	—	UKN
70	UKN	0.32	UKN	—	UKN
75	6.3	0.05	2	—	100
80	5	0.18	1	—	100
85	5.2	0.25	12	—	70
90	4.75	0.31	12	—	70
95	3.0	0.29	81	—	60
100.6	1.45	0.17	81	—	70
107.4	.25	—	18	—	65

Net	4099	Prop	45
Cal	125		

27

<u>Angle</u>	<u>Comment</u>
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99	99
100	100

At water edge

Sullivan R. / Lower Reach 13 / Transit #12 06-28-07

Sta	Depth	Velocity	Comments
22.6	0.10	0	
23.9 (0.10)	0.50	0.08	
31.0 (0.4)	0.90	0.22	Left edge of bldg (0.30 ft)
33.1 (1.15)	1.60	0.59	Right edge of bldg
38.5 (1.0)	1.50	0.69	
45.1 (0.5)	1.05	1.10	Taken @ 10° angle
51.1 (0.8)	2.50	0.53	
58.1 (2.1)	2.65	0.29 / 0.04	
64.7 (1.3)	1.60	1.62	Taken @ 40° angle
67.4 (0.8)	1.25	1.13	Taken @ 30° angle
71.7 (0.8)	1.40	1.30	Taken @ 40° angle
74.9 (0.7)	1.45	0.25	Left edge of bldg Top of bldg barely wetted
79.9 (0.5)	1.00	1.27	Right edge of bldg
82.2 (0.5)	0.90	2.29	Left edge of bldg Taken @ 25° angle
85.3 (0.6)	1.05	1.27	Right edge of bldg - bldg 0.5 ft above surface
92.0 (0.5)	0.85	3.91	
95.3 (0.6)	1.00	0.39	Left edge of bldg bldg 3.0 ft above surface
105.1 (0.6)	1.25	1.32	Right edge of bldg
108.9 (0.55)	1.05	2.69	Left edge of bldg
118.2 (0.7)	0.80	0.01	Right edge of bldg
122.5 (0.5)	1.00	0.53	
124.9 (0.3)	0.60	1.29	Taken @ 85° angle
145.4 (0.5)	0.80	1.66	
155.1 (0.3)	0.70	6.95	

Transit #6 Cont'd.

Sta	Depth	Velocity	Comments
161.5 (0.8)	1.30	1.40	
170.5 (1.0)	1.85	1.80	
171.9 (0.7)	1.20	1.54	Left edge of bldg clump
177.7 (0.3)	0.60	2.32	Right edge of bldg clump
179.7 (0.5)	1.00	1.72	Left edge of bldg
182.6 (0.10)	0.60	0.43	Right edge of bldg
183.5 (0.10)	0.50	1.10	
184.9	0.10	0	Left bldg edge cover 2
186.0	0.70	0	Top of bldg cover 2
186.9	0.40	0	Right bldg edge cover 2
188.3	0.15	0	
192.2	0.37	0.69	Cover 2
195.2 R.W.E			

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Sultan R / Lower Reach #2 / Transect # 7 06/29/01

STA	Depth	Velocity	Comments
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LWE			
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12.0			
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31

STA	Depth	Velocity	Comments
27.1	0.0	0	cover 8
28.6 (0.12)	0.50	0	cover
28.9 (0.5)	0.82	0.16	cover 2
31.0 (0.9)	1.15	0.28	LE Bldg Cover=2
31.1 (1.60)	1.92	1.40	RE Bldg (Top of Bldg 0.84 depth)
38.5 (1.30)	1.70	0.76	
45.1 (1.05)	1.38	1.15	
51.1 (2.50)	2.88	0.45/1.74	
58.1 (2.65)	2.98	0.90/0.19	
64.7 (1.60)	1.90	2.95	30° angle
67.4 (1.25)	1.61	1.78	Top of 40° angle
71.7 (1.40)	1.71	1.33	40° angle
74.9 (1.45)	1.79	1.21	LE Bldg (Top of Bldg 2.0' below surface)
79.9 (1.00)	1.38	1.40	RE Bldg
82.2 (0.90)	1.35	3.23	LE Bldg (Top of Bldg 0.10' below surface)
85.3 (1.05)	1.36	1.32	RE Bldg
92.0 (0.85)	1.20	3.35	
95.3 (1.20)	1.25	0.16	LE Bldg (Top of Bldg 2.6' above surface)
105.1 (1.25)	1.60	2.27	RE Bldg
108.9 (1.05)	1.38	2.82	
118.2 (0.80)	1.05	0.46	
122.5 (1.00)	1.33	1.12	
134.9 (0.60)	0.82	1.08	30° angle
145.4 (0.80)	1.28	1.94	

STA	Depth	Velocity	Comments
155.1 (0.95)	1.30	1.56	
161.9 (1.30)	1.60	2.86	
170.5 (1.65)	2.21	2.13	
171.9 (1.30)	1.53	2.68	LE Bldg
177.7 (0.60)	1.06	2.44	RE Bldg
179.7 (1.00)	1.32	2.06	LE Bldg
182.6 (0.60)	0.9	1.22	RE Bldg cover=8
183.5 (0.50)	0.90	0.85	cover=8
184.9 (0.12)	0.10	0	LE Bldg cover=2
186.0 (0.70)	-0.5	0	Top of Bldg cover=2
186.9 (0.40)	0.40	0.10	RE Bldg cover=2
188.3 (0.15)	0.48	0.33	cover=2
192.2 (0.20)	0.54	1.65	cover=2
195.2 (0.20)	0.28	1.04	60° angle cover=2
197.3	RWE		

Sultan R. / Lower Reach #3 / Transect #4 06-29-07

STA	Depth	Velocity	Comments
LWE			
69.0 (0.55)	1.55	Ø	cwc = 2
74.0 (0.83)	1.32	Ø	
79.0 (1.03)	1.56	0.76	
80.0 (1.09)	1.58	0.86	
87.0 (1.30)	2.10	0.89	
91.0 (2.12)	2.65	0.84 / 0.71	
95.0 (2.55)	3.12	0.85 / 0.56	
99.0 (2.55)	3.10	0.84 / 0.70	
103.0 (2.60)	3.15	0.84 / 0.75	
107.0 (2.30)	2.91	0.67 / 0.76	
111.0 (2.60)	3.13	0.82 / 0.67	
115.0 (3.15)	3.67	1.25 / 1.33	
119.0 (3.60)	4.16	1.58 / 1.77	
121.0 (3.85)			Include measure, unmeasured
125.0 ()			" "
126.0 ()			" "
131.0 (2.70)	3.1	0.64 / 0.63	
136.0 (2.70)	3.24	0.32 / 0.36	
141.0 (2.15)	2.64	0.22 / 0.34	
146.0 (2.80)	3.33	0.24 / 0.35	
151.0 (3.00)	3.58	0.29 / 0.28	
156.0 (2.45)	3.17	0.48 / 0.23	
161.0 (1.90)	2.4	0.23	

STA	Depth	Velocity	Comments
172.8 (1.10)	1.7	Ø	
115.8 (0.0)	3	Ø	
116.7	0.0	cwc	

Sultan R. / Lower Reach #3 / Transect #3

STA	Depth	Velocity	Comments
LWE 6.8	Ø	Ø	
8.1 (0.0)	0.55	Ø	Core = 2
9.0 (0.6)	1.00	0.62	
14.0 (0.8)	1.22	1.68	
15.7 (1.10)	1.53	1.02	LE Bld
17.0 (0.10)	0.42	2.84	Top Bld
18.2 (1.10)	1.62	0.08	RE Bld
20.0 (1.30)	1.90	2.31	
25.0 (1.50)	1.97	1.18	
25.6 (1.52)	2.02	1.20	LE Bld
26.5 (0.50)	0.98	1.81	Top Bld
27.5 (1.40)	1.81	1.03	RE Bld
33.0 (1.50)	1.92	2.46	
34.4 (1.52)	1.88	2.27	LE Bld
38.0 (0.90)	0.30	0.07	Top Bld
40.8 (1.85)	2.15	3.95	RE Bld
45.0 (1.48)	1.81	2.03	
46.4 (1.35)	1.64	3.35	LE Bld
48.0 (0.2)	0.22	2.81	Top Bld
49.5 (1.25)	1.73	2.99	RE Bld
52.0 (1.10)	1.48	1.83	
55.1 (1.55)	1.88	2.08	LE Bld
56.2 (0.90)	0.60	Ø	Top Bld
59.4 (1.45)	1.80	3.60	RE Bld

06-29-07

 S. of the
 Prop-
 Col = 5750
 6A
 167

STA	Depth	Velocity	Comments
61.0 (1.25)	1.58	3.35	
62.8 (1.35)	1.70	2.28	LE Bld
64.8 (-1.0)	-0.70	Ø	Top Bld
68.0 (1.40)	1.80	3.75	RE Bld
67.0 (1.75)	2.10	4.75	
73.0 (1.18)	1.52	2.52	
78.0 (1.45)	1.85	0.76	
83.0 (2.00)	2.40	2.75	
88.0 (1.00)	1.40	3.49	
93.0 (1.30)	1.68	1.75	
98.0 (1.00)	1.35	5.30	
103.0 (1.20)	1.58	0.71	
102.4 (1.20)	1.56	0.42	
103.8 (1.00)	1.56	0.33	
RWE 104.7	Ø	Ø	

Sutton B. / Lower Ranch 42 / Truss #2

06-29-07

STA Depth Velocity Comments

LWE	1.3	0	0
16.7(0.0)	0.75	0	
17.1(0.20)	1.67	0	
21.0(0.0)	1.70	0.09	
25.0(0.0)	2.15	1.69	
28.0(0.0)	2.35	4.52	
30.5(0.0)	2.75	3.10/2.42	
33.0(0.0)	2.88	1.83/1.00	
36.0(0.0)	2.95	1.53	
39.0(0.0)	1.68	1.52	
41.7(0.75)	1.50	1.73	
44.7(0.70)	1.31	2.40	
47.7(0.70)	1.42	2.22	
48.2(0.70)	1.45	2.87	
49.3(0.20)	0.88	3.45	
51.4(1.10)	1.05	4.17	
54.0(1.05)	1.80	3.96	
57.0(1.5)	2.20	3.08	
60.0(1.20)	1.98	1.15	
62.7(1.60)	2.32	1.30	
66.0(1.30)	2.00	1.46	
69.0(1.10)	1.88	0.81	
69.7(0.9)	0.92	0.53	
70.4(0.0)	2.06	0.25	

Swallow 5450
prop 6A
rel 162

Truss #2	Depth	Velocity
753(0.0)	1.46	2.06
76.5(0.0)	0.40	0.25
79.1(0.75)	1.48	0.22
80.8(1.00)	0.83	2.37
83.1(1.70)	2.42	1.63
87.3(1.85)	2.62	4.50/2.50
90.6(2.2)	2.90	4.10/0.48
93.2(1.2)	1.87	2.30
95.9(1.5)	2.12	0.05
97.8(0.2)	0.88	0.09

RUE 101.7

Swallow

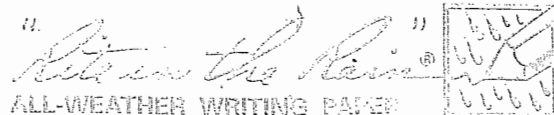
1628.03.1001
Sultan River
Instream Flow



"All-Weather"
ALL-WEATHER
ENVIRONMENTAL
No. 550

Reach 2 Upper
July 10-13 '07

1628.03



ALL-WEATHER ENVIRONMENTAL FIELD BOOK

Name R2 Resource Consultants Inc.
(Glen Anderson)

Address _____

Phone 425 556 1288

Project Sultan River

1628.02

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

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PAGE

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DATE

7/10/07

TR1 - BM-Lower	2.47	2.45	2.45
TR 2	-	3.29	3.29
TR 2 - BM-Lower	4.65	4.65	4.65
TR 3 - BM-Lower	3.87	3.85	3.84
TR 4	0.07	0.07	
TR 5	0.83	0.83	
TR 6	0.62	0.63	
TR 7*	1.08	1.09	
TR 6 - 7**	1.09	1.09	

* BM TR2 to HP2

* BM to HP 7

** HP 6 to HP 7

Reference Page Index

147	Error codes, Hazardous classifications, Container types
148	Sampling guidelines (Liquids)
149	Sampling guidelines (Solids)
150	Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
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152	Soil Classification
153	Soil Classification
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155	Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
156	Maximum Concentration of Contaminants for the Toxicity Characteristic

Sultan River
Location Reach 2 - upper

Date 7/10/07

Project / Client Snopug

Sunny & Hot

Flow ~ 95 cfs

Transect Setup & Bank Surveys

Crew

Dudley Ricci

Glen Anderson

Nico Romero

Jesse Reynolds

Temp	SG	Readings	
		IN	OUT
	SG	3 1/16"	3 1/16"
	TIME	10am	6pm

Perm. SG

	12:36pm	4pm
Read	29.66	29.66

~~Time~~

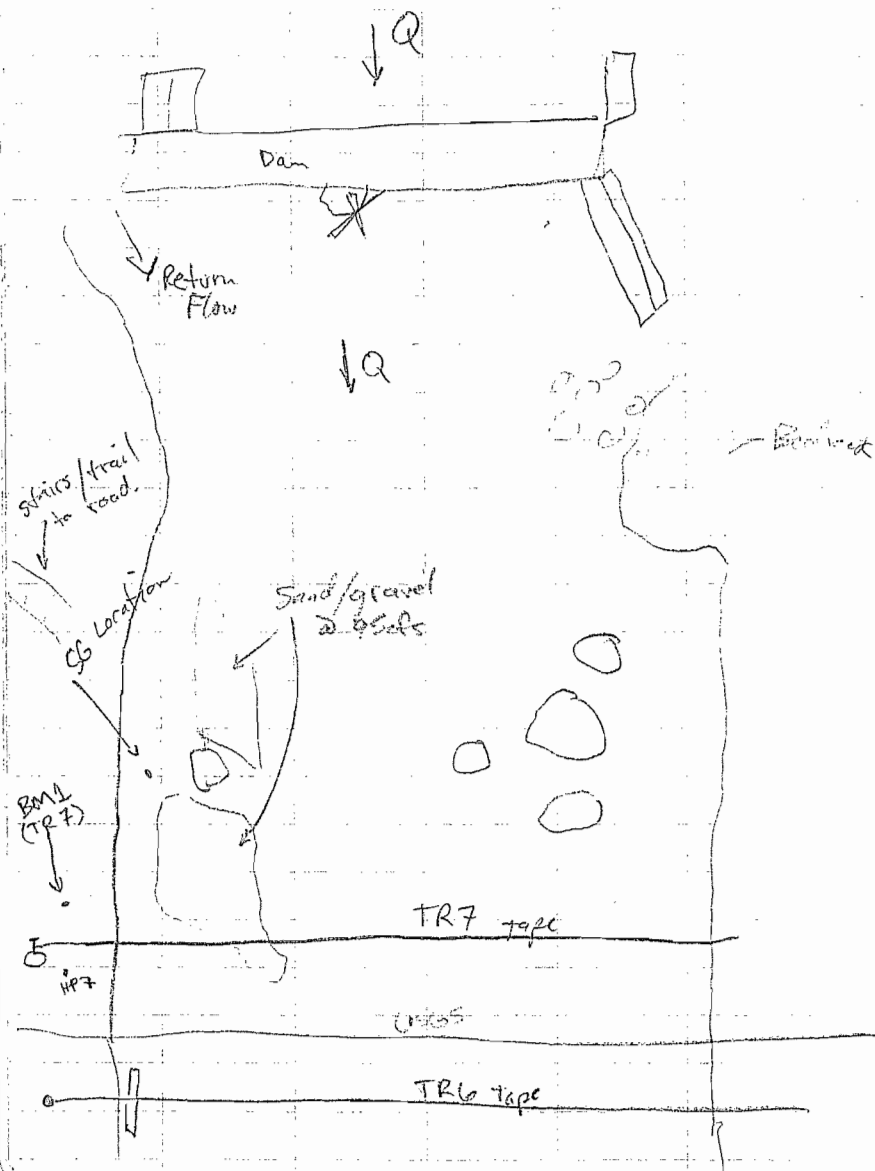
Location

Date

Project / Client

Location Sultana River
Reach 2 - upper Date 7/10/07

Project / Client _____



Location _____ Date _____

Project / Client _____

BM1 = Rebar

TR7 RWP = screw/bolt in tree
 LWP = Rebar
 HP7 = Rebar

TR6 RWP = Rebar
 LWP = Bolt in alder
 HP6 = Rebar

Sultan River
Location Reach 2- upper

Date 7/10/07

Project / Client

TR 7 Bank Survey

STA	BS	HT	FS	Sub	% Down
BM 1	0.16				
1.3'			0.50	18	70%
2.7'			1.78	18	55%
4.3'			1.68	81	60
5.5'			2.99	81	70
8.0'			3.62	56	60
10'			4.21	81	75
14'			4.65	1	100
19'			5.12	1	100
24'			5.64	1	100
31'			5.42	34	65
37'			6.66	34	65
38			6.85	34	65
42'			6.54	45	70
46.5'			6.97	54	70
130.6'			7.10	63	55
132.5'			6.73	23	70
135.5'			6.75	24	80
138.0			6.85	24	65
141			5.69	2	100
144			4.95	2	100
146.5			3.62	81	70
150.3			2.21	81	70
155			1.50	81	60

Location

Date

Project / Client

Comments

Below Rt. WP

RWE

LWE

Base Lt. WP

Location Sultan River
Reach 2 - upper Date 7/10/07

Project / Client

TRC - Bank Survey

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>Sub</u>	<u>%Don</u>
1 RWP	0.92				
0'			0.95	81	70
1'			1.71	81	80
3.8'			2.79	81	90
8.1			3.67	81	90
12.6			4.73	81	90
15.4			5.24	28	60
18.9			6.46	82	60
119.9'			6.25	2	100
123			5.56	2	100
127.9			5.10	2	100
132			4.51	2	100
136.1			3.82	28	90
138.6			2.76	81	90
143			1.42	81	90

Location _____ Date _____

Project / Client _____

Comments

RWP = Rebar Sta. = 1.0'

base RWP

PWE ~ (0.17' = 0)

LWE

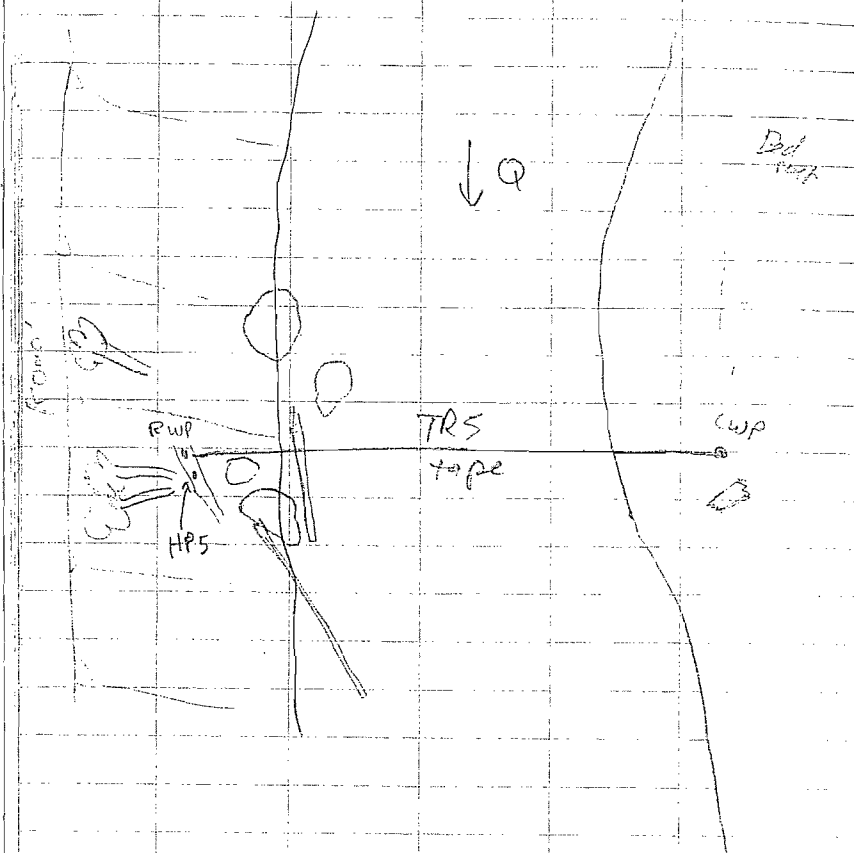
Base LLWP

Slope continues up

Location Sultan River
Reach 2 - upper Date 7/10/07

Project / Client

TR5



Location _____ Date _____

Project / Client _____

TR5 RWP = Bolt in down log
 LWP = Rebar
 HP5 = Nail in down log

Sultan River
 Location Reach 2- upper Date 7/10/07
 Project / Client Bank Survey TR 5

STA	BS	HI	FS	SUB	%Dom
RWP	0.39				
1'			2.38	81	90
3.3			2.89	81	90
4.1			4.56	81	90
6.4			5.24	81	90
8.5			5.94	92	85
10.8			6.32	28	80
13.3			6.14	8	100
15.1			8.34	8	100
83.0			8.68	86	55
85.9			8.20	43	55
91.2			6.85	32	55
94			6.26	2	100
100.2'			5.35	—	—
107'			4.63	82	75
114'			4.73	81	55
121'			3.95	18	60
126'			2.96	81	55
129'			0.27	81	80

Location _____ Date _____
 Project / Client _____

RWP = Bolt/screw in Log
 Base RWP

RWE

LWE

Base LWP

(LWP = Rebar
 @ Sta. 100.2')

slope continues @ 40%

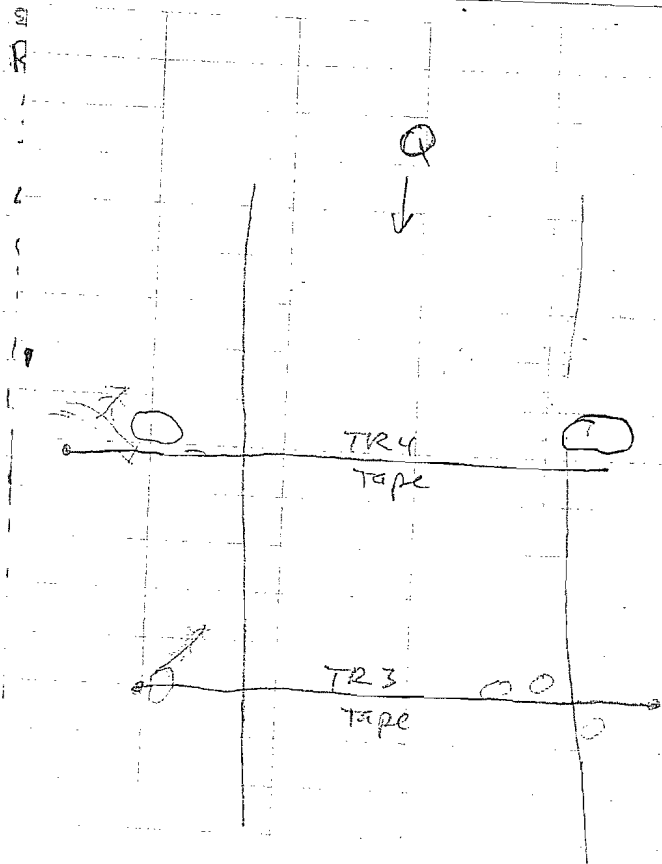
12 14

Location Sultan River
Reach 2 - upper

Date 7/10/07

Project / Client

TR 4



15 7

Location

Date

Project / Client

TR 4 RWP = Rebar in ground
 LWP = Rebar @ base of
 boulder
 HP4 = Rebar in ground

TR 3 RWP = Rebar behind tape
 LWP = Rebar in ground

16

Location Sultan River
Reach 2-upperDate 7/10/07Project / Client TR4 Bank Survey

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>SUB</u>	<u>% Down</u>
RWP (top)	1.42				
- 5'			0.77	81	90
1'			1.73	81	90
2.5			2.15	8	100
2.9			3.46	8	100
7			4.04	2	100
10.7			4.73	28	90
13			4.40	2	100
20			4.83	23	80
23.7			5.30	23	60
27.9			6.62	82	70
31.1			7.20	28	65
81.5			7.21	2	100
85.7			6.19	62	55
88			3.53	8	100
89.5			4.09	81	90
91.6			3.41	81	85
97			2.59	18	80
101			1.47	18	85

SL RealtLocation 25.606

12.34p.m.

Date

17

Project / Client

RWP - TR 4

same EL. $\Delta = 7'$, then slope up $\Delta 40\%$
Base RWP

RWE

LWE

LWP - Base

Slope continues for
an additional 11'

Location Rearch 2-upper Date 7/10/07
 Project / Client TR3 Bank Survey

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>Sub</u>	<u>% Dam</u>
RWP/HP	1.35			—	—
-2'			1.50	82	85
-4'			0.65	82	85
1.0'			2.15	82	85
4.3'			5.27	8	100
10.3			6.17	2	100
13.5			7.53	2	100
17.4			8.08	2	100
20			8.21	45	65
23.3			7.97	54	60
24.8			8.15	45	60
67.1			8.24	8 9	100
70.3			7.69	8 9	100
71.7			8.21	91	90
73.6			7.15	82	90
78.8			4.84	8	100
83'			3.45	81	90

Location _____ Date _____
 Project / Client _____

Continue
 TOP RWP/HP = Rebar @ STA 1.0'

Base of RWP

RWE

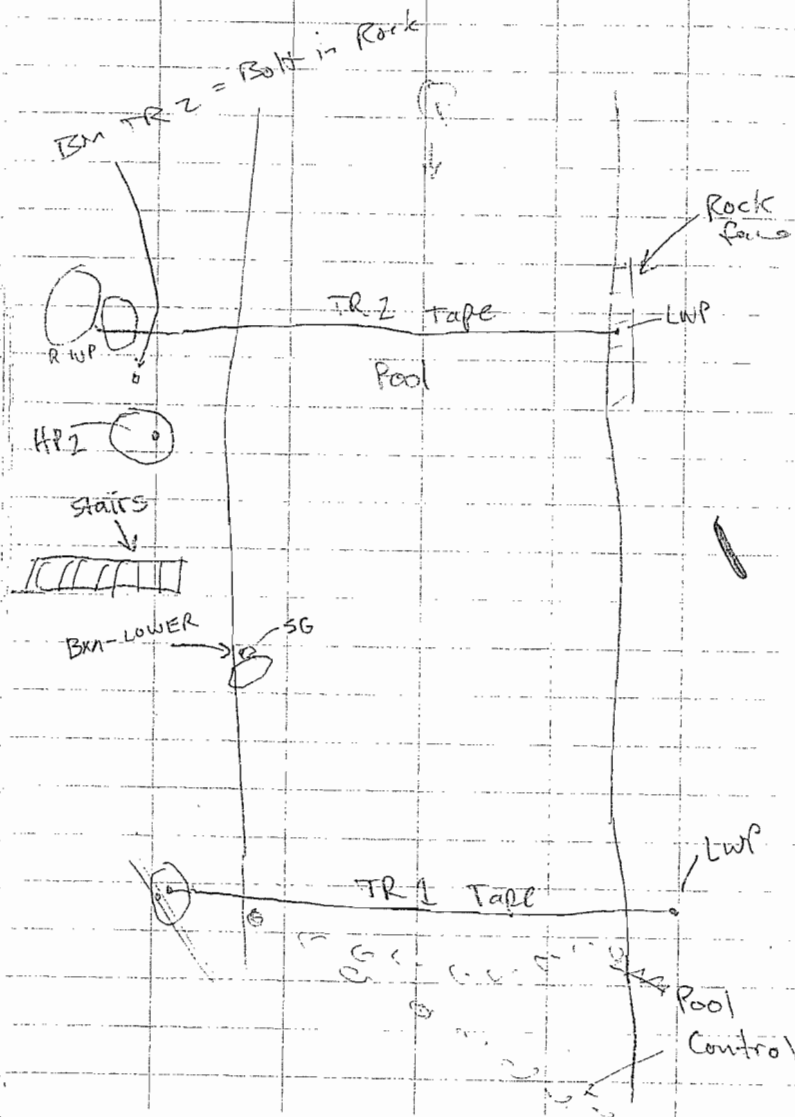
LWE

top of boulder

Base LWP/HP (Rebar)

(continues flat for 10')
 then 45% slope

TR 2 & 1



TR 2

RWP = cable in rock crack
HP2 = Paint on Large Boulder

TR 1

LWP = Metal Plate on Rock anchor

RWP = Nail in down alder

Cable anchor in boulder next to RWP

Location Reach 2-upperDate 7/10/07

Project / Client

TR 2 Bank Survey

STA	BS	HI	FS	SUB	% Down
79.0		109.34	8.30	9	100
78			13.32	92	95
17.4			12.85	28	65
14.0			11.39	28	85
11			10.70	2	100
7.1			9.99	2	100
4.9			8.90	8	100
3.3			9.20	8	100
2.6			4.38	8	100
1.0			4.35	8	100

Location _____

Date _____

Project / Client _____

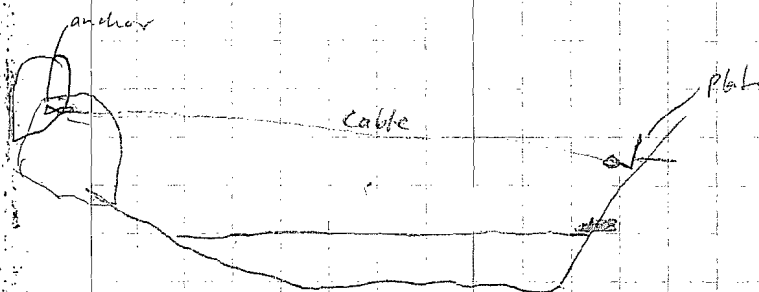
Comments

LWP = Metal plate in rock wall

LWE (D = 0.51)

RWE

RWP = Cable attached to rock anchor



Location Reach 2 - UpperDate 7/10/07

Project / Client _____

TRI Bank Survey

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>SUB</u>	<u>% Dom</u>
		<u>109.34</u>			
1'			7.39	8	100
0'			5.66	8	100
1'			8.20	8	100
2.2			9.48	87	65
5.7			10.47	18	55
9.8			10.24	81	80
11.1			12.90	8	100
78.6			12.80	28	60
81.1			12.39	28	80
85			10.61	21	60
86.4			7.80	8	100

Location _____

Date _____

Project / Client _____

Comments

LWP = metal Plate

Base of LWP

LWF

RWF

Base RHP

Location Sultan River Reach 2 - upper Date 7/10/07

Project / Client _____

Lower Level Loop

STA	BS	HI	FS	EL	L
BM-LOWER	9.37	109.37		100.00	
TR 1 HP			6.90		
TR 2 HP			4.72		
TR 3 HP	5.47	109.34	5.50		-0.03
TR 2 HP			4.69		-0.03
TR 1 HP			6.88		-0.07
BM-LOWER			9.34		-0.03

BM-LOWER	TR 1	+ 2.97
TR 1	TR 2	+ 2.18
TR 2	TR 3	- 0.78

6.90	4.72
4.72	5.50
2.97	2.18

Location _____

Date _____

Project / Client _____

BM-LOWER = corner of lower
SG (EL SG = 29.14)



TR 2 HP = Paint on large boulder

TR 1 HP = TOP of Nail in
down Log.

TR 3 HP = Top Rebar

Location Reach 2 - Upper Date 7/10/07

Project / Client _____

Level Loop TR 5

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>
HP 5	1.08			100.00
WPS	0.24		0.25	
HP 5			1.07	

✓

Level Loop 4

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>
HP 4	3.25			100.00
WP 4	3.23		3.32	
HP 4			3.21	

-1.11

Level Loop 6 & 7

<u>STA</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>
HP 6 HP 6	2.51			
WP 6 WP 6			1.89	
HP 7			1.42	
Bm	0.33		0.34	100.00
HP 7			1.41	
WP 6			1.88	
HP 6			2.50	

△

-0.01

-0.01

-0.01

-0.01

Location _____

Date _____

Project / Client _____

$$\begin{array}{r} 1.25 \\ 1.25 \\ \hline 0.83 \end{array}$$

$$\begin{array}{r} 1.4 \\ 2.87 \\ 1.87 \\ \hline 0.62 \\ 1.21 \\ 1.41 \\ 1.33 \\ \hline 1.08 \end{array}$$

$$\begin{array}{r} 2.51 \\ 1.42 \\ \hline 1.09 \end{array}$$

Location Reach 2 - upperDate 7/11/07

Project / Client _____

Sunny & Hot ~ 90° today

Flow ~ 95 cfs

CREW

Glen Anderson

Nico Romero

Jesse Reynolds

TO Measure:Discharge, D&V, Substrate,
Cover

	IN	OUT	other
SG	25.66	25.66	
TIME	8:35am	2:45pm	

Location _____

Date 7/11/07

Project / Client _____

Lower Level Loop

STA	BS	HI	FS	EL	A
TR 3 HP	5.29				
TR 2 HP			4.49		
(BM TR 2)			7.78		
BM-LOWER			9.14	100.00	
TR 1 HP	6.73		6.69		-0.04
BM-LOWER			9.19		+0.05
(BM TR 2)			7.83		+0.05
TR 2 HP			4.54		+0.05
TR 3 HP			5.33		-0.04

BM TR 2 = Top of Bolt in Rock

TR 1 - BM	2.45
TR 1 - TR 2	2.20
TR 2 - TR 3	-0.86
9.14	
7.78	
6.69	
5.34	
4.49	
7.20	

Location Sultan Ream 2 - upper Date 7/11/07

Project / Client _____

STA	TR 3	WS	Survey	EL
BM-Lower	BS	HI	FS	
	9.19	109.19		100.00
32'			12.32	
45'			12.34	
67'			12.28	
LWSE @ 40' o/s			11.86	

STA	TR 2	WS	Survey	EL
	BS	HI	FS	
76'		109.19	12.69	
19'			12.68	

STA	TR 1	WS	Survey	EL
	BS	HI	FS	
14'		109.19	12.71	
LWSE @ ~40' o/s			12.76	
77'			12.70	

Location _____ Date _____

Project / Client _____

4099 4B 125

RWSE

CWSE

LWSE

LWSE

RWSE

LWSE

JUST above control 40' o/s on L side

RWSE

Pool Control Survey

STA	BS	HI	FS	EL
1	1.40	0.70		102.47
15.5			5.44	
17			7.01	
22			7.36	
23.3			6.40	
24.5			7.03	
26.5			7.57	
29.3			7.40	
31			7.30	
31.6			6.55	
33.5			6.95	
37			7.36	
39			7.21	
41.3			6.10	
42.8			7.28	
45.5			7.20	
50			8.10	
54.5			8.25	
59			7.89	
64.2			8.64	
65.4			7.10	
67			9.07	
73.2			9.20	
78.9			8.74	

Pool control banks

Same as TR #1 Bank

~~Flow~~
WSE Same as 40' d/s of m

STA	FS	RWE
84	8.85	
87.9	7.71	
93	7.94	
97.5	7.01	
100.0	6.66	
102.9	5.62	

Location Sultan Reach 2 upper Date 7/11/07Project / Client TR 2 Pool

STA	D	V	Substrate	% Don	Cover
1 17.5	—	—	28	80	—
21.5	0.14	⊖	82	80	—
21.8	1.74	0.04	28	60	—
24.7	2.08	⊖	82	60	—
26.2	0.03	⊖	8	100	—
31	1.80	0.10	78	70	—
32.3	1.21	0.33	8	100	—
32.7	1.78	0.53	78	60	—
37	3.40	$\frac{0.72}{0.68}$	84	60	—
42	3.10	$\frac{1.57}{0.60}$	47	60	—
44.3	2.35	0.32	87	55	—
47.5	0.75	1.42	8	100	—
51	3.10	$\frac{1.98}{2.00}$	85	55	—
55.5	2.30	1.74	58	70	—
56.8	2.48	2.01	95	55	—
61	1.55	1.28	9	100	—
64.2	1.30	0.89	9	100	—
67.6	1.60	0.44	9	100	—
72	1.51	0.52	91	70	—
75	0.75	0.02	91	80	—
78	0.45	0.04	91	90	1
(53)	2.65	$\frac{1.55}{1.45}$	58	70	—

Location _____

Date _____

Project / Client _____

Notes

RWE

top boulder

edge boulder

edge boulder

top boulder

edge boulder

top boulder

edge boulder

X 20°

edge boulder

top boulder

edge boulder

flat top

start bedrock outcrop

LWE - undercut bank

extra cell

Location Sultana Reach 2 upper Date 7/11/07

Project / Client _____

TR 5 Level Loop \pm WSE Survey

STA	BS	HI	FS	EL	Δ
1 HP 5	2.12			100.00	
WP	1.27		1.29		-0.02 ✓
HP 5			2.11		-0.01 ✓

17'	RWSE		9.24		
47'	CWSE		9.49		
80'	LWSE		9.59		

$$\begin{array}{r} 10 \\ 8.52 \end{array}$$

$$\begin{array}{r} 1.29 \\ \hline \end{array}$$

$$\begin{array}{r} .83 \end{array}$$

Location _____

Date _____

Project / Client _____

Sultan
Location Reach 2 - upper

Date 7/11/07

Project / Client

TR 6 & 7 Level Loop & WSE's

STA	BS	HI	FS	EL
1 BM-upper	0.34	100.34		100.00
HP 7			1.43	
HP 6			2.52	
WPC	1.87	100.32	1.89	-0.02
HP 6			2.49	-0.03
HP 7			1.41	-0.02
BM-upper			0.32	-0.02

TR 6 WSE Survey

19' RWSE	7.29
54' CWSE	7.26
106' LWSE	7.33

TR 7 WSE Survey

129' LWSE	7.22
75' CWSE	7.20
48' RWSE	7.22
RWSE @ 60' U/S of TR 7	7.10

RWSE @ 60' U/S of TR 6 8.51

1.43	2.52
.34	1.43
1.09	1.09

Location

Date

Project / Client

Location Sultan Ranch 2 - upper Date 7/11/07Project / Client TR 7

STA	D	V	Sub	%D	cover
47'	0	0	45	55	—
52'	0.82	1.43	65	55	—
57	1.55	1.98	67	55	—
62	1.35	2.24	76	70	—
66.7	1.80	2.57	87	55	—
67.9	0.75	2.81	8	100	—
69.1	2.25	2.09	85	55	—
74	2.00	0.19	87	55	—
77.2	1.20	1.18	86	70	—
79.4	0	0	8	100	—
80.9	1.70	1.60	86	80	—
86	1.95	1.64	86	70	—
91	1.55	0.82	86	55	—
92.8	-0.9	—	8	100	—
95.5	1.53	1.57	82	55	—
99	2.20	$\frac{0.89}{0.11}$	82	55	—
100.9	1.90	0.29	82	55	—
101.9	0.28	0	8	100	—
103.3	1.12	0	28	60	—
107.7	1.66	0.41	86	60	—
113	1.02	0.86	86	60	—
118	1.05	0.29	58	80	—
123	1.22	0.02	82	55	—
126.4	1.17	0.03	85	60	—
130.2	0	0	84	55	—

Location _____

Date _____

Project / Client _____

RWE

→ good spawning gravel
 Starts @ 39' (dry) to
 55' (wet) * Redd marked @ 50'

edge boulder

top boulder

edge boulder

front edge of boulder

edge boulder

top boulder

edge boulder

430°

420°

edge boulder

top "

edge "

(behind other boulder) 430°

(@ 0.60) Vel. break due to boulders in front (took 0.20 s/s)

edge boulder

top "

edge boulder

430°

LWF

Location Sultan Reach 2 - upperDate 7/11/07

Project / Client _____

WSE Summary

	<u>LWSE</u>	<u>CWSE</u>	<u>RWSE</u>	<u>W/S/O/S</u>	<u>24</u>
TR 1	96.47	-	96.48	96.42	40'
TR 2	96.49	-	96.50	-	-
TR 3	96.90	96.84	96.86	97.32	40'
TR 4	94.10	-	94.17	-	-
TR 5	92.51	92.61	92.86	-	-
TR 6	92.99	93.06	93.03	91.81	60'
TR 7	93.10	93.12	93.10	93.22	60'

* Need W/S & D/S WSE's on TR 4 & 5

* Need dist. between TR 1, 2 & 3
and " TR 6 & 7

	<u>L-Bank</u>	<u>R-Bank</u>
TR 1		↓
TR 2		94'
TR 3		94'
TR 6		
TR 7	25	37

Location _____

Date _____

Project / Client _____

Control Point Elevations

	<u>HP</u>	<u>WP</u>	<u>BM</u>
TR 1	102.47		100.00
2	104.65		
3	103.87		
4	100.00	99.93	
5	100.00	100.83	
6	97.83	98.45	
7	98.91		100.00

Location Sultan River
Reach 2 - upperDate 7/12/07

Project / Client _____

Sunny & Warm. No wind.

Flow ~ 200 cfs

Crew

Glen Anderson

Nico Romero

Jesse Reynolds

To measure:Discharge, D & V, cover
Pool transect

	<u>IN</u>	<u>OUT</u>	<u>Other</u>
SG	26.35	26.35	16.35
TIME	8:10 am	3:40 pm	10 am

- Water Level up 0.69' @ SG

109.43	109.41	109.41
12.24	11.81	11.95
97.17	97.60	97.46

Location Sultan
Reach 2 - upperDate 7/12/07

Project / Client _____

Lower Level Loop

STA	BS	HI	FS	EL	
BM-LOW	9.43	109.43		100.00	
HP3			5.57	104.96	
BM-TR2			8.06	101.37	
HP2			4.77	104.60	
HP1	6.95	109.41	6.97	102.46	-0.02
HP2			4.76		-0.01
BM-TR2			8.05		-0.01
HP3			5.55		-0.02
BM-LOW			9.41		-0.02
TRI RISE 8'			12.24	97.17	
LWSE 10'			12.24	97.17	
LWSE 40' P/S			12.42		
TR2 LWSE			12.23	97.18	
RWSE 10'			12.22		
TR3 LWSE 72'			11.81	97.60	
* LWSE 45'			11.78		
40' LWSE			11.43		
RWSE 10'			11.95	97.42	
8.13	8.06	8.13	3		
109.43	109.43	109.43	109.43		
5.57	4.77	6.97	8.06		
103.86	104.66	102.46	101.37		

* Difficult spot. May have local wave effect. Don't use

Location BEACH 2 UPPER

Date 7/12/07

Project / Client TR 2 D4U

M.i.D

STA	$\frac{D}{\phi}$	$\frac{V}{\phi}$	COVER	X	Notes
15.9	$\frac{0}{\phi}$	$\frac{0}{\phi}$			PWE
17.5	0.71	$\frac{0}{\phi}$			
21.5	0.90	0.02			
21.8	2.45	0.14			
24.7	2.80	$\frac{0.28}{0.25}$			
26.2	0.73	.76		40	
31	2.45	.24			
32.3	2.10	.94			
32.7	2.48	0.64			
37	4.12	$\frac{1.41}{0.73}$			
42	3.85	$\frac{2.42}{1.09}$			
44.3	3.00	$\frac{3.13}{0.01}$			
47.5	1.48	3.19			
51	3.75	$\frac{3.99}{2.23}$			
53	3.32	$\frac{3.52}{2.82}$			
55.5	3.00	$\frac{3.40}{1.89}$			
56.8	3.20	$\frac{3.17}{1.93}$			
61	2.15	2.33			
64.2	1.95	2.20			
67.6	2.25	1.01			
72	2.25	0.72			
75	1.50	0.54			
78	1.12	0.20	1		PWE

LWF

Location

Date _____

Project / Client

2.08	
0.03	
1.80	
1.21	
1.78	
3.40	
3.10	
2.35	
0.75	
3.10	
2.30	> 2.65 ←
2.48	
1.55	
1.30	
1.60	
1.51	
0.75	
0.45	

Sultan Reach 2 - Upper

7/12/07

MID

TR 4 Level Loop & WE's

STA	BS	HI	FS	EL	
HP 4	1.18	101.18		100.00	
RWP	1.21	101.14	1.25	99.93	-.04
HP 4			1.14		-.04
29'			6.47	94.67	FWSE
83'			6.44	94.70	LWSE
50' W/S			6.09		LWSE
40' P/S			6.55		LWSE

.07 ✓

71.8	2
101.14	101.14
6.47	6.44
94.67	94.70
+0.5	+0.6

could not measure - no tape up, very variable

TR 6 & 7 Level Loop & WSE's

STA	BS	HI	FS	EL
BM	0.28	100.28		100.00
HP 7			1.37	
HPC			2.46	
WPC	1.80	100.25	1.83	-0.03
HPC			2.42	-0.04 ✓
HP 7			1.34	-0.03 ✓
BM			0.25	-0.03 ✓
RWSE (18')			6.70	93.55 TR 6
RWSE @ 60' U/S TR 6			8.45	✓
CWSE (54')			6.72	TR 6
LWSE (121.5')			6.73	93.52 TR 6

TR 7 WSE's

LWSE (132')	6.69	93.56
CWSE (75')	6.60	
RWSE (44')	6.65	93.60
RWSE @ 60' U/S TR 7	6.47	

100.28	
1.37	2.46
.28	1.37
1.09	1.09
99.11	
100.25	
6.69	
93.56	
100.28	
100.25	
6.70	
93.55	
99	
100.25	
6.70	
93.55	
99	
100.25	
6.65	
93.60	

Sultan River
Location Ream 2 - upper
Project / Client HIGH

Date 7/13/07

Overcast, no wind

Flow ~ 400 cfs

Crew

Glen Anderson
Nico Romero
Jesse Reynolds

To measure:

D&V, where possible.

No D&V on TR 2, just USE

at blm TR 6 & TR 7

	IN	OUT	after
SG	26.98	26.99	26.98

TIME 7:30am 4:30pm 2pm

up from 26.35 on 7/12/07
+ 0.63'

5/12/07	7/13/07	7/13/07	7/13/07
26.35	26.98	26.99	26.98
26.35	26.98	26.99	26.98
26.35	26.98	26.99	26.98

Location

Date 7/13/07

Project / Client

Lower Level Loop & WSE's

STA	BS	HI	FS	EL
BM-LOW	9.31	109.31		100.00
HP 3			5.47	
BM TR2			7.95	
HP2			4.66	
HP1	6.83	109.29	6.85	
HP2			4.66	
BM TR2			7.95	
HP3			5.47	
BM-LOW			9.29	

TR 1 WSE's

LWSE (11")	108.59	10.80
RWSE	109.29	11.49
LWSE @ 40' D/S	108.44	11.10

TR 2 WSE's

LWSE	108.77	10.77
RWSE	109.29	11.49

TR 3 WSE's

LWSE	108.32	10.32
RWSE	109.29	11.49
LWSE @ 40' U/S	108.59	10.00

BM-LOW	8.59	108.59	100.00
--------	------	--------	--------

60 62

Location Sultan Reach 2 - Upper

Date _____

7/13/07

Project / Client

HIGH

1. *Chlorophyll a* and *Chlorophyll b* contents were determined by spectrophotometry using the method of Lichtenthaler and Whistler (1987).

794

7A	EX	100	100	100
LP	100	100	100	100
WR	100	100	100	100
IN	100	100	100	100

110	1.15	10.15	
-----	------	-------	--

LWSE (86) 101.15 5.77

WSP @ 50' W/S 5.41

DIFF. 2.90 D/S 5.87

ROSE	5.88
------	------

10/10 6.01

4.02

63

Location

Date _____

Project / Client

Location Sultan Reach 2 - upperDate 7/13/09Project / Client HIGHTR 5 LL & WSE's Survey

STA	BS	HI	FS	EL
HP 5	2.10	102.0		100.00
SUL	1.25	103.00	1.36	
WSE			2.00	

-01

01

STA	BS	HI	FS	EL
WSE (87)		102.10	8.50	
WSE @ 40' 45"			7.86	
WSE @ 40' 25"			7.06	
WSE (15')			8.31	

Location _____

Date _____

Project / Client _____

H1G4

Date _____

1197

496

U. P. 10

HP6

HP 7

BM

TRC

LOSE (110)	100.23	6.23	94.00
------------	--------	------	-------

CWSE (54) 6.21

FOUO (17) 6.13 9.14

200' P/S 7.84

LUSE (134)	100.23	6.19
------------	--------	------

CASE (75) 6.11

ROUSE (36)	6.16.71
------------	---------

W 1952 60' U.S. 5.41

Dist TR6 - TR7

Left Bank	25'
-----------	-----

Rt. Bank 37'

100.23

6.16

94 07

170.23

517

14. 04

5.48

Sultan River
Instream Flow

DURA *Lite*

WATERPROOF

LEVEL

No. 613

Reach 2 Upper

July 10-13 '07

1628.03

Surveyor: NR

Swoffer #: 5760
Prop #: 6A
Calibration: 167

Upper Reach #2 Transect #1 / 07-11-07

STATION	Depth	Velocity	Substrate	Cover	% Dom
1wp 1.0	-	-			
1WE 11.1	0	0	20	2	100
14.5	0.12	0	20		100
14.7	-0.55	0	80		100
15.1	0.02	0	90		100
16.4	0.33	0	52		55
19.4	0.70	0.23	52		55
22.5	0.5	0.49	6		75
25.4	1.56	0.44	43		65%
27.4	1.74	1.09	45		60%
28.7	0.84	1.09	80		100%
29.8	1.89	1.04	80		100%
32.8	1.83	1.39	43		65%
35.8	1.86	1.57	43		60%
38.8	2.00	1.59	34		60%
41.8	2.92	1.17	32		60%
44.8	3.12	1.22 / 1.18	32		60%
47.8	3.12	1.25 / 1.16	84		55
50.8	2.68	1.12 / 1.14	57		70%
53.4	2.31	1.17	45		65
54.7	1.51	1.26	80		100
55.9	2.29	1.19	80		100
59.0	1.89	0.75	85		70
62.0	1.89	0.48	63		60

Transect #1 Contd. --

Angle Comments

Left edge of Bldr

Top of Bldr

Right edge of Bldr

5°

Left edge of submerged Bldr

Top of submerged Bldr

Right edge of submerged Bldr

Spawning gravel

" "

" "

Left edge of submerged Bldr

Top of submerged Bldr

Right edge of submerged Bldr

60°

Upper Reach #2 / Transect #1 Contd ---

STA	Depth	Veloc	Subst	Cover	% Down
65.0	1.78	0.88	23		55%
66.1	1.68	1.28	23		60%
67.1	0.32	1.60	80		100
67.4	0.90	1.53	80		100
67.9	0.61	1.23	80		100
69.6	-0.20	φ	80		100
72.7	6.78	1.28	80		100
74.5	1.11	0.68	46		85%
75.5	0.02	0.10	80		100
76.6	0.33	0.86	80		100
RWP 78.7	φ	φ	82		90%

RWP 67.0

Angle	Comments
50°	u/s Bldr Velocity break
55°	Left edge of submerged Bldr
65°	Top of Submerged Bldr
40°	Right edge of Submerged Bldr (taken @ surface)
40°	Left edge of Bldr clump
	Top of bldr clump
	Right edge of Bldr clump
	Left edge of Bldr
	Top of Bldr (est Flow)
	Right edge of Bldr

Upper Reach #2 / Transect #3 / 07-11-07

Surveyor: NR

Swoffer: 5750
Prop: 64
Calib: 167

STA	Depth	Velocity	Substr	Cover	% Don	Angle	Comments
RWE 1.0	-	-					
RWE 25.0	0	0	54		60%		
26.5	0.02	0.10	54		55		Right edge of Bldr (est. flow)
27.0	-0.40	0	80		100		Top of Bldr
28.0	0.10	0.15	80		100		Left edge of Bldr (est. flow)
30.0	0.51	-0.12	26		60	15°	u/s velocity break (eddy)
32.0	0.64	-0.08	65		55	20°	u/s velocity break (eddy)
34.0	0.78	0.04	34		60	15°	u/s velocity break (taken @ surface)
36.0	1.02	0.51	37		70	5°	
38.0	1.34	2.68	67		60		
40.0	1.57	1.93	68		65		
42.0	1.69	1.14	78		55%		
44.0	1.85	2.56	36		60%		
46.0	1.96	1.45/4.29	38		55%		Measurement taken @ 0.60' s from surface
48.0	1.94	3.37	86		70		
49.0	1.77	3.32	87		80	5°	
52.0	2.37	0.67	86		80	5°	
54.0	2.53	3.36/0.56	84		75		
56.0	1.87	3.90	86		75		
58.0	2.41	3.95	86		80		
60.0	1.77	1.11	87		85		
62.0	1.58	0.47	83		70	30°	u/s Bldr velocity break
62.7	2.01	0.15/0.45	32		60	30°	"
64.0	0.89	2.14	80		100	5°	Left edge of u/s Bldr velocity break

Upper Reach #2 / Transect #3 Contd. --

STA	Depth	Veloc	Subst	Cover	% Down
65.0	1.26	1.84	9		100%
66.0	1.37	0.88	9		100
66.8	0.61	0.80	9		100
67.2 LWE	0	0	9		100

LWP 78.8

Angle 5°
Comments

Upper Reach #2 / Transect #4 / 07-11-07 Surveyor NR

Sniffer #5750
Prop: #6A
Calibr. 167

Station	Depth	Velocity	Substr	Cover	% Don	Angle	Comments
RWP 1.0							
RWE 31.2	0	0	23	2	90%		
33.5	0.23	0	23		80%		u/s Bldr velocity break
36.0	0.38	0.10	23		70%		" " " "
38.5	0.74	0.10	23		55%		" " " "
41.0	1.36	0.24	32		60%		
43.5	1.67	0.40	34		60%	5°	
45.0	.98	1.58	68		60%	10°	
47.0	2.19	1.37/2.84	84		80%		
49.4	3.12	4.19/2.08	84		80%		
51.0	2.62	3.18/0.72	84		80%		
53.5	2.02	1.05/1.79	84		70%		
56.0	2.61	1.82/0.15	84		65%		
58.5	1.92	2.00	85		60%		
61.0	1.61	2.78	58		55%		
62.5	1.53	1.95	54		60%	5°	Spawning Gravel
64.5	1.25	0.62	45		60%	10°	" "
66.5	0.98	0.13	45		55%	10°	" "
68.5	0.75	0.97	54		70%		" "
70.5	0.52	1.11	54		75%		" "
72.5	0.55	0.58	54		75%	5°	" "
74.5	0.59	0.22	54		75%	15°	End "
76.5	0.56	0.04	54		75%		" "
78.5	0.48	0	45		55%		

Surveyor NR

Swiffer 57
Dfop 64
Calib 167

Upper Reach #2 / Transect #5 / 07-11-07

STA	Depth	Veloc	Substr	Cover	%Dom	Angle	Comments
RWP 1.0							
RWE 14.7	0	0	8	2	100		
17.5	1.11	0.57	83		05		
21.0	1.51	2.35	83		65		
23.2	1.19	1.72	83		90		
24.8	2.01	2.72	83		90		
27.0	1.81	0.18/4.39	83		85	5°	1/5 Bldr velocity break
28.7	1.91	2.09/0.58	83		90	10°	edge of 1/5 Bldr velocity break
29.9	2.22	3.70	83		90	5°	
33.5	2.32	0.27	83		90	20°	1/5 velocity break
35.5	1.86	2.01	83		85	15°	
38.8	1.51	2.52	86		70		
41.2	1.51	2.24	86		60	5°	
45.0	4.2	2.44	56		55		Right edge of Bldr
46.9	0.15	2.70	8		100		Top of Bldr
49.5	0.98	2.60	4		100		Left edge of Bldr
51.0	1.21	3.19	65		60		
53.2	0.92	0.33	65		60	30°	Right edge of Bldr
54.5	-0.55	0	8		100		Top of Bldr
56.0	0.54	3.78	8		100	5°	Left edge of Bldr
59.0	0.41	0.28	86		80		1/5 velocity break
62.0	0.92	1.32	84		60		
63.5	0.87	0.34	86		60	5°	Left edge of Bldr
66.5	-0.55	0	88		100		Top of Bldr

Surveyor: NR

Swaffer: 5750
Prop: 64
Calib: 167

Upper Reach #2 / Transect #6 / 07-11-07

STA	Depth	Velocity	Substr	Cover	% Dom
RWP 1.0					
RWE 18.8	0.02	0	2		100
23.0	0.82	0.29	23	4	80
29.0	0.92	1.34	46		60
32.0	1.52	1.68	54		65
35.0	1.58	0.78	56		60
39.0	1.48	0.91	45		70
42.8	1.05	2.47	65		70
45.7	0.71	1.86	56		60
49.5	0.73	1.04	85		75
54.5	0.54	0.93	84		65
56.2	0.58	2.27	64		60
57.4	-0.40	0	8		100
59.2	0.62	3.26	8		100
63.5	1.12	2.98	46		55
67.0	1.98	1.67	45		55
66.5	1.42	1.58	45		55
70.3	1.39	1.16	45		60
70.7	0.15	0.80	8		100
73.6	1.35	1.32	8		100
78.1	1.54	2.03	85		65
82.0	1.21	2.74	48		55
86.0	1.58	1.42	25		60
91.0	1.02	1.48	34		60

Transect #6 Contd...
Angle Comments

30°

40°

20°

35°

5°

Right Edge of Blk

Top of blk

Left edge of blk

20°

10°

5°

5°

10°

Right edge of blk

60°

Top of blk

Left edge of blk

Surveyor NR

Upper Reach #2 / Transect #1 / 07-12-07

STA	Depth	Veloc	Comments
LWE			
11.1 (0.0)	0.73	Ø	
14.5 (0.2)	0.84	Ø	
14.7 (0.3)	-0.10	Ø	
15.1 (0.4)	0.74	Ø	
16.4 (0.3)	1.05	0.46	
19.4 (0.7)	1.39	0.63	
22.5 (1.0)	1.75	0.79	
25.4 (1.3)	2.25	1.19	
27.4 (1.5)	2.44	1.48	
28.7 (1.7)	1.53	1.94	
29.8 (1.8)	2.57	1.54	
32.8 (2.0)	2.53	2.29/1.65	
35.8 (2.2)	2.57	2.27/1.47	
38.8 (2.4)	2.69	1.93/1.73	
41.8 (2.6)	3.31	1.91/1.47	
44.8 (2.8)	2.78	1.95/1.68	
47.8 (3.0)	3.78	1.92/1.85	
50.8 (3.2)	3.42	1.92/1.71	
53.4 (3.4)	3.00	1.75/1.62	
54.7 (3.5)	2.22	1.67	
55.9 (3.6)	2.99	1.60/1.38	
59.0 (3.8)	2.61	1.27/1.52	
62.0 (4.0)	2.59	0.65/0.28	5° angle

Swoller # 5750
PROP # 6A
CALIB # 167

Transect #1 cont'd. ---

STA	Depth	Veloc	Comments
65.0 (1.1)	2.49	1.09	
66.1 (1.6)	2.37	0.56	
67.1 (0.7)	1.02	1.10	5° angle
67.4 (0.7)	1.60	0.80	45° angle
67.9 (0.6)	1.30	1.24	20° angle
69.6 (0.2)	0.45	1.21	
72.7 (0.7)	1.46	1.28	5° angle
74.5 (1.1)	1.73	1.14	
75.5 (0.0)	0.72	0.74	
76.6 (0.3)	0.98	0.71	
78.7 (0.2)	0.61	0.23	
RWE 81.4	Ø	Ø	

Surveyor NR

Swoffer = 5750
Prop = 64
Calib = 167

Upper Reach #2 / Transect #2 / 07-12-07

STA	Depth	Veloc	Comments
RWE 15.6	Ø	Ø	
20.0	0.44	2.41	(10° angle) Spawning gravel (45@ 60%)
25.0 (0.0)	0.58	1.88	15° angle
26.5 (0.02)	0.62	1.21	10° angle
27.0 (-0.04)	0.25	1.17	10° angle
28.0 (0.10)	0.92	1.18	
30.0 (0.51)	1.18	0.66	10° angle
32.0 (0.6)	1.29	0.26	
34.0 (0.78)	1.54	0.54	
36.0 (1.02)	1.74	3.63	
38.0 (1.34)	2.01	2.66	
40.0 (1.57)	2.27	2.32	
42.0 (1.69)	2.32	1.52/3.46	
44.0 (1.85)	2.57	4.46/2.44	
46.0 (1.96)	2.63	4.32/0.85	
48.0 (1.94)	2.62	4.65/2.71	
49.0 (1.77)	2.53	3.96/2.40	
52.0 (2.37)	3.08	4.19/2.52	
54.0 (2.53)	3.21	4.55/2.22	
56.0 (1.87)	3.40	4.47/2.14	
58.0 (2.41)	3.03	5.11/3.56	
60.0 (1.77)	2.34	1.77	
62.0 (1.58)	2.21	.55	10° A
62.7 (2.01)	2.63	1.86/0.56	10° A

Transect #2 Contd.

STA	Depth	Veloc	Comments
64.0 (0.89)	1.46	3.53	
68.0 (1.26)	1.85	2.79	
66.0 (1.37)	1.88	.28	
66.8 (0.61)	1.19	1.17	
67.2 (0.0)	.56	0.98	R edge boulder
69.0	0.10	Ø	top boulder
70.4	0.44	0.40	L edge boulder 10° A
72.7	0.40		LWE

Surveyor KR

Upper Reach #2 / Transect #4 / 07-12-07

STA	Depth	Velocity	Comments
RWE 27.8	0	0	
31.2 (0.0)	0.52	0.44	
33.5 (0.23)	0.75	0.32	5° angle
36.0 (0.38)	0.91	0.65	
38.5 (0.4)	1.17	0.13	
41.0 (1.36)	1.88	0.86	
43.5 (1.67)	2.01	2.52	
45.0 (1.98)	2.51	2.97/0.43	
47.0 (2.19)	2.67	2.70/2.31	
49.4 (3.12)	2.55	4.20/3.16	
51.0 (2.6)	3.10	6.74/3.28	
53.5 (2.44)	2.00	5.09/1.13	
56.0 (2.61)	3.10	4.35/0.50	
58.5 (1.92)	2.46	1.54	
61.0 (1.61)	2.21	2.16	
62.5 (1.53)	2.15	2.45	
64.5 (1.25)	1.85	2.55	
66.5 (0.48)	1.62	3.51	
68.5 (0.75)	1.33	2.12	
70.5 (0.52)	1.13	2.54	
72.5 (0.55)	1.18	2.97	
74.5 (0.59)	1.22	2.62	
76.5 (0.56)	1.18	1.62	
78.3 (0.48)	0.91	0.36	

Swiffer #5750
Prop #64
Calibr. 167

Transect #4 Contd.

STA	Depth	Velocity	Comments
79.8 (0.25)	0.78	0.16	
81.4 (0.0)	0.51	-0.07	
LWE 84.3	0	0	

Surveyor: NRB

Lower Reach #2 / Transect #6 / 07-12-07

STA	Depth	Velocity	Comments
ROE			
418.8(0.02)	0.62	0.21	
23.0(0.82)	1.47	0.14	20° angle
29.0(0.92)	1.54	1.88	
31.0(1.52)	2.12	3.07	5° angle
35.0(1.58)	2.10	1.17	60° angle
39.0(1.48)	2.02	0.65	20° angle
42.8(1.05)	1.60	2.58	5° angle
45.7(0.71)	1.21	1.81	15° angle
49.5(0.73)	1.26	1.17	40° angle
54.5(0.59)	1.10	2.49	
56.2(0.58)	1.10	3.61	
57.4(-4.0)	0.20	4.17	5° angle
59.2(0.62)	1.22	4.30	
63.5(1.12)	1.73	2.97	10° angle
67.0(1.98)	2.60	2.16/1.17	
68.5(1.98)	2.60	2.09/1.48	10° angle
70.3(1.39)	2.00	1.12/0.12	Took one mess near surface
70.7(0.15)	0.62	1.64	25° angle
73.8(1.35)	1.80	1.78	
78.1(1.54)	2.05	2.63	
82.0(1.21)	1.71	2.63	
86.0(1.58)	2.16	1.52	u/s blade velocity down
91.0(1.02)	1.51	1.88	20° angle

 Swiffer #5750
 Prop #6A
 Caliber #167

Transect #6 Contd.

STA	Depth	Velocity	Comments
94.1(0.88)	1.40	1.17	15° angle
96.0(-1.0)	-0.50	Ø	Top of blade
97.6(0.91)	1.42	0.82	
100.4(0.89)	1.40	0.43	15° angle
103.5(0.39)	0.92	0.56	45° angle
107.5(0.0)	0.51	0.96	45° angle
109.7(-0.10)	0.39	0.52	60° angle
111.1(0.0)	0.50	0.41	45° angle
115.4(0.61)	1.12	0.04	
119.7(0.0)	0.49	-0.03	
LOWE 121.1	Ø	Ø	

Lower Reach # 2 / Transect # 7 / 07-12-07

STA	Depth	Veloc	Comments
43.1	0	0	RWE
47.0(0.0)	0.50	2.20	
52.0(0.82)	1.38	2.39	
57.0(1.55)	2.08	3.08	
62.0(1.19)	1.82	3.62	
66.7(1.80)	2.32	3.26	
67.9(0.70)	1.23	3.59	
69.1(2.00)	2.70	3.19/2.43	
74.0(0.0)	3.19	1.19	
77.0(0.0)	1.70	2.39	
79.4	0.50	2.98	10° angle
80.9	2.18	2.23	
86.0(1.03)	2.45	1.99	15° angle
90.0(1.55)	2.06	0.31	
92.8(-2.4)	-0.40	0.0	
94.0(1.53)	2.03	0.78	
99.0(2.20)	2.70	0.61/0.11	
100.9(1.90)	2.53	0.10/0.10	
101.9(0.23)	0.80	0.11	
107.3(1.12)	1.68	0.02	
107.7(1.66)	2.16	0.15/0.16	
113.0(1.02)	1.51	2.11	
118.0(1.05)	1.52	0.46	
127.2(1.22)	1.60	0.98	60° angle

Swoffer 5750
prop 6A
calib 167

Transect # 7 continued...

STA	Depth	Veloc	Comments
126.4(1.17)	1.67	0.54	
130.2(0.0)	0.57	0.91	30° angle
139.1 LWE	0	0	

Lower Reach #2 / Trans. 1 #3 / 07-12-07

STA Depth Veloc Comments

Roe 12.6 \emptyset \emptyset G

15.6(0.0) 0.68 .52 G

20.0(0.00) 1.15 2.09 G

25.0(0.52) 1.25 3.74 G

26.5(0.1) 1.30 1.71 G

27.0(0.25) 0.85 0.54 G

28.0(0.02) 1.60 0.25 G

30.0(1.18) 1.81 0.99 G

31.0(1.29) 1.90 0.99 G

34.0(1.54) 2.20 0.71 G

36.0(1.74) 2.40 4.90 G

38.0(2.01) 2.70 5.48/2.72 G

40.0(2.27) 2.90 5.64/1.85 G

42.0(2.32) 3.00 5.34/1.36 G

44.0(2.57) 3.20 5.32/2.98 G

46.0(2.63) 3.26 5.28/2.38 G

48.0(2.62) 3.25 3.31/5.41 G

49.0(2.53) 3.28 5.15/3.16 G

52.0(3.08) 3.70 5.79/3.42 G

54.0(3.21) 3.80 6.80/4.86 G

56.0(3.40) \rightarrow Too Deep & Swift

58.0(3.03) 3.55 5.36/3.80 NR

60.0(2.34) 2.90 0.87/2.54 NR

62.0(2.71) 2.81 0.51/0.57 NR

35° Δ
25° Δ

(-2 depth = 2.90)

Swoffer # 4099
G = prop # 4 B
Calib # 125

Transsect 3 contd...

STA Depth Veloc Comments

62.7(2.63) 3.3 2.24/0.40 NR

64.0(1.46) 2.10 4.96 NR

65.0(1.85) 2.45 4.51 NR

66.0(1.08) 2.54 2.48/2.71 NR

66.8(1.19) 1.85 2.01 NR

67.2(0.56) 1.20 1.96 NR

69.0(0.10) 0.71 2.77 NR 5° Δ

70.4(0.44) 1.10 1.17 NR

72.7(0.40) 1.07 0.16 NR

LWE 74.1 \emptyset \emptyset NR

G = Glen

NR = N

NR = Swoffer # 5750
prop # 6 A
Calib # 167

Lower Reach #2 / Transect #4 / 07-13-07

STA	Depth	Velocity	Comments
R-E 26.7	Ø	Ø	G
27.8(0.0)	0.53	Ø	G
31.2(0.52)	1.05	2.35	G
32.5(0.75)	1.22	.52	G
36.0(0.91)	1.5	1.09	G
38.5(1.17)	1.75	.25	G
41.0(1.88)	2.41	1.10	G
43.5(2.01)	2.80	3.70/2.33	G
45.0(2.30)	3.00	4.86/0.73	G
47.0(2.67)	3.20	5.28/2.17	G
47.4(2.55)	4.05	4.54/3.01	G
51.0(3.10)	} Too Deep & Swift		
53.5(3.00)			
56.0(3.10)			
58.5(2.46)	3.07	4.44/2.59	NR
61.0(2.21)	2.81	2.83/1.15	NR
62.5(2.15)	2.73	2.15/1.53	NR
64.5(1.85)	2.42	2.02	NR
66.5(1.62)	2.20	3.79	NR
68.5(1.33)	2.02	4.29	NR
70.5(1.13)	1.75	3.48	NR
72.5(1.18)	1.82	3.60	NR
74.5(1.22)	1.85	3.29	NR
76.5(1.18)	1.83	2.21	NR

Transect #4 Cont'd...

STA	Depth	Veloc	Comments
78.3(0.91)	1.63	2.35	NR
79.8(0.78)	1.35	1.04	NR
81.4(0.51)	1.11	0.67	5° angle NR
84.3(0.0)	0.62	-0.25	NR
LWE 86.0	0.13	Ø	NR

G = Glen
NR = Nico

G ⇒ Swotter # 4099
Prop # 4B
Calib # 125

NR ⇒ Swotter # 5750
Prop # 6A
Calib # 167

Lower Reach #2 / Transect #5 / 07-13-02

STA	Depth	Veloc	Comments
RW#			
74.7(0.40)	1.00	-0.31	G Cover = 5
17.5(1.55)	1.92	-0.37	G
21.0(2.00)	2.48	5.52	G
23.2(1.70)	2.80	4.27	G
24.8(2.45)	2.95	6.47/0.04	G
27.0(2.40)	2.90	5.82/0.66	G
28.7(2.30)	3.00	5.00/4.12	G
29.9(2.70)	3.20	3.33/2.09	G
32.5(2.62)	3.05	5.27/0.88	NR
35.0(2.50)	2.85	5.25/1.10	NR
38.8(1.91)	2.48	5.41/2.06	NR
41.2(1.91)	2.35	3.57	NR
45.8(2.84)	2.30	1.91	NR
49.9(2.51)	1.10	3.10	NR
44.5(1.46)	1.92	4.31	NR
51.0(1.72)	2.12	2.95	NR
53.2(1.42)	1.95	1.71	NR
54.5(2.01)	0.42	4.68	NR
56.0(1.02)	1.48	4.57	NR
59.5(0.91)	1.40	0.15/2.95	10° Δ NR
62.0(1.48)	1.79	3.16	NR
63.5(1.32)	1.55	2.55	NR
61.5(0.35)	0.66	5.87	NR

Transect #5 Contd. --

STA	Depth	Veloc	Comments
69.2(1.03)	1.52	1.54	NR
71.5(1.52)	2.01	1.70	NR
73.0(1.20)	1.65	0.95	5° angle NR
73.5(1.13)	1.60	1.82	NR
74.9(2.1)	1.70	2.27	NR
75.0(1.05)	0.34	3.42	NR
82.4(0.65)	1.13	2.17	NR
82.7(0.52)	1.02	2.33	NR
85.8(0.0)	0.52	1.37	NR
LWE 87.8	\emptyset	\emptyset	NR

G \Rightarrow Swoller #4099

Prop 44B

Calib #12.5

NR \Rightarrow Swoller 5750

Prop # 6A

Calib # 167

Lower Reach #2 / Transect #6 / 07-13-07

STA	Depth	Velocity	Comments
RWE 15.9	0.0	0.0	
18.8(0.62)	1.15	0.24	object cover, bld
23.0(1.47)	1.97	0.69	small woody debris
29.0(1.54)	2.0	2.33	
32.0(2.12)	2.65	$\frac{4.49}{2.23}$	
35.0(2.10)	2.60	$\frac{0.47}{2.58}$	
39.0(2.02)	2.48	2.55	
42.8(1.60)	1.95	2.63	
47.5(1.2)	1.70	1.33	u/s bld
47.5(1.28)	1.80	0.95 / 2.60	
54.5(1.10)	1.60	3.22	
58.2(1.10)	1.60	4.12	
57.4(0.30)	0.80	5.11	
59.2(1.22)	1.90	4.25	
63.5(1.73)	2.25	2.48	
67.0(2.60)	3.1	$\frac{2.31}{1.40}$	
68.5(2.60)	3.1	$\frac{2.25}{1.44}$	
72.3(2.00)	2.50	0.02 / 2.30	edge bld
70.7(0.63)	1.1	1.72	top bld
73.8(1.80)	2.30	2.16	
78.1(2.05)	2.55	$\frac{2.66}{4.99}$	
82.0(1.71)	2.2	2.48	
86.0(2.16)	2.75	$\frac{1.53}{0.78}$	
91.0(1.51)	2.0	1.56	

Transect #6 contd...

7/13/07

STA	Depth	Velocity	Comments
94.1(0.90)	1.4	1.36	15° angle
96.0(-0.50)	0.05	~ 0.50	
97.6(1.42)	1.90	1.30	edge bld
100.4(1.40)	1.92	1.53	
103.5(0.92)	1.40	0.53	30° angle
107.5(0.51)	1.12	1.14	45° angle
109.7(0.39)	0.88	0.89	30° angle
111.1(0.50)	0.96	0.81	20° angle
113.4(1.12)	1.62	0.59	
119.7(0.40)	1.0	0.0	
121.1(0.9)	0.6	0.0	
LWE 124.1	0.0	0.6	

Swatfer # 5750
 Drop # 6A
 Calib # 167

Lower Reach #2 / Trsect #7 / 07-13-07

STA	Depth	Veloc	Comments
206	35.1	Ø	G
43.1 (6.8)	0.55	2.74	G 15° A
47.0 (0.50)	1.1	2.86	G
52.0 (1.32)	1.9	3.63	G
57.0 (2.08)	2.56	3.52/2.81	G
62.0 (1.82)	2.32	5.01	G
66.7 (2.32)	2.80	5.36/4.28	G
67.9 (1.23)	1.75	4.71	G
69.1 (2.70)	3.18	4.46/4.19	G
74.0 (2.47)	2.93	2.97/0.82	NR
77.2 (1.70)	2.20	3.22	NR
79.4 (0.50)	1.02	3.42	NR
80.9 (2.18)	2.70	2.92/1.67	NR
86.0 (2.45)	2.94	3.04/3.45	15° A NR
91.0 (2.06)	2.53	1.07/0.12	NR
92.8 (-0.40)	0.10	1.13	NR
95.5 (2.03)	2.56	0.84/0.01	30° A NR
99.0 (2.70)	3.20	1.57/0.06	5° A NR
100.9 (2.57)	2.88	0.02/0.06	10° A NR
101.9 (0.80)	1.27	0.05	NR
103.3 (1.68)	2.17	0.02/0.26	NR
107.7 (2.16)	2.68	0.27/0.00	10° A NR
113.0 (1.9)	2.01	1.89	15° A NR
118.0 (1.52)	2.01	0.60	45° A NR

STA	Depth	Veloc	Comments
123.0 (1.60)	2.11	1.20	90° A NR
126.4 (1.67)	2.11	0.55	45° A NR
130.2 (0.57)	1.04	0.92	70° A NR
139.1 (0.0)	0.38	Ø	
LWE 139.4	Ø	Ø	

G = Glen
NR = NR

G = Swatler #4099
Prop #4B
Col. 6 #125

NR = Swatler #5750
Prop #6A
Col. 6 #167

1628.03.1002
Sultan River
Instream Flow



"All-Weather"
ALL-WEATHER
ENVIRONMENTAL
No. 550

Reach 2 Lower

July 10 - 13, 07

1628.03

Location _____ Date _____

Project / Client _____

Sultan River
Instream Flow Study

Reach 2 Lower

July 10 - 13, 2007

Crew: A. Weybright
M. Glogner
T. Sullivan

Location _____ Date 7/10/07

Project / Client _____

Sultan River Reach 2 Lower
Instream Flow Study

	In	Out
Time	9:45	5:00
S.G.	12.0	12.0

Equipment: Level AS-20
SN L45573
Geo-Line Rental

Location Rd Lower Date 7/10/07Project / Client Sultan R. Sno Pod

TR-1 Bed Profile & Level Loop

STA	BS	HI	FS	Eleva	Sub.
BM	0.42			100.00	
		100.42			

HP

2.45 97.97

WP Top

2.60 97.82

WP FP

WP

2.79

97.82

100.61

HP

2.64 97.97

BM

0.61 100.00

Bed Profile

100.61

Location Rd Lower Date 7/10/07Project / Client Sultan R. Sno Pod

TR-1 Bed Profile Continue

STA	BS	HI	FS	Eleva	Sub.
+4.0		100.61		+3.3'	
RWP = 1.0			2.14		veg/silt
4.0			3.11		" bed
6.8			3.75		bed/sand 90, veg
8.1			4.67		"
10.9			5.54		"
11.3			6.36		bed, sand 80
LWE 13.2			6.92		" 90
97.5					
RWP = 98.6			6.82		sngr sand 60
102.40			6.36		sn 75 60
103.6			6.00		"
108.0			5.25		bedd sand 60
110.6			4.19		blt sand 60
111.6			4.54		"
114.0			4.45		" 70
117.0			4.34		"
RWP = 119.7			4.02		blt 70 silt, veg
+5.0			2.58		

6

Location R2 Lower Date 7/10/07Project / Client Sultan R. Sna Pod* TR-2 Level Loop

STA	BS	HI	FS	Eleva
BM	1.97			100.00
		101.97		
HP-1			2.18	99.79 ^{use}
HP-2			1.24	100.73
HP-2	1.06			100.73
		101.79		
HP-1			2.02	99.77
BM			1.80	99.99 ^{on}

7

Location R2 Lower Date 7/10/07Project / Client Sultan R. Sna PodTR-2 Bed Profile

STA	BS	HI	FS	Eleva	Sub
16.0		101.79	0.86		sand s. H 70, veg
LWP= 1.0			2.35		"
7.0			2.95		"
13.1			3.69		"
15.8			4.63		sn col 60
18.0			4.76		lg gr 60
LWE= 20.7			5.32		60
			4.77		60
RWE= 158.3			2.89		70
158.9			3.58		70
161.1			2.65		60
163.6			3.11		70
165.0			2.48		90
RWP= 167.6			2.51		"
+ 6.0			2.05		"
+ 12.0					"

Location Reach 2 Lower Date 07/10/07
 Project / Client Sultan R. Snapud
TR-3 Level Loop

STA	BS	HI	FS	Eleva	R
BM	3.13			100.00	
		103.13			
HP-1			2.81	100.30 99.32	
HP-2			3.75	99.38	
HP-2	3.61			99.38	
		102.99			
HP-1			3.68	99.31	
BM			2.99	102.99 100.00	

Location Reach 2 Lower Date 07/10/07
 Project / Client Sultan R. Snapud
TR-3 Bed Profile

STA	BS	HI	FS	Eleva	Sub
		102.99			
+ 6.0			4.12		lgv 60
LWP=1.0			4.64		med gr out
7.0			5.90		"
10.8			6.78		lgv 60
12.0			8.07		Cub. 60
14.4			7.86		silt 60
LWE=16.6			8.02		sand 60
7 124.1					med gr 60
RWB=125.5					sm gr 60
126.8			7.72		med gr 60
129.6			6.40		sm gr 70
133.0			6.00		hld silt 80
134.3			5.57		"
RWP=135.7			4.54		
+ 5.0			4.20		
			3.28		

Location Reach 2 Lower Date 7/10/07Project / Client Sultan R. Sna Pod

TR-4 Level Loop

STA	BS	HI	FS	Eleva
BM	2.86			100.00
		102.86		
HP-1			4.55	98.31
Rock			6.47	96.39
TP				
Rock	6.51			96.39
		102.90		
HP-1			4.58	98.32
BM			2.90	100.00

Location Reach 2 Lower Date 7/10/07Project / Client Sultan R. Sna Pod

TR-4 Bed Profile

STA	BS	HI	FS	Eleva	Sub.
-40.0		102.90	1.30		sand/silt 60
-35.0			3.05		"
-25.0			2.86		"
-15.0			3.17		sand 70
-5.0			3.43		cob. bld 60
LWP = 1.0			4.35		"
10.0			4.96		sand bld 70
17.3			5.65		"
20.4			6.63		" 60
LWP = 21.9			7.14		
RWP = 117.2			7.21		s.H sand 60
118.4			5.72		"
120.8			4.95		"
RWP = 123.2			4.56		"
+5.0			2.25		"

Location Reach 2 Lower Date 7/10/07Project / Client Sultan R. Sno. Pvd

TR-5 Level Loop

STA	BS	HI	FS	Eleva
BM (rebar) 2.32				100.00
		102.32		
HP (rebar)			2.56	99.76
Rock			4.49	97.83
Rock (P)				
Rock 4.65				97.83
		102.48		
HP			2.72	99.76
BM			2.47	100.01 SK

Location Reach 2 Lower Date 7/10/07Project / Client Sultan R. Sno. Pvd

TR-5 Bed Profile

STA	BS	HI	FS	Eleva	Sub
LWP 2.0		102.48	3.37		silt sand 60 veg
7.0			3.80		" LWD
14.0			5.03		" LWD
LWP 17.0			5.38		" LWD
RWP 178.6			6.28		bls silt 70
178.4			5.88		"
181.0			4.50		bls veg 60
183.9			3.54		"
188.3			2.92		"
191.6			2.41		"
RWP 195.1			2.14		"
+5.0			1.55		"

14

Location Reach 2 Lower

Date 7/10/07

Project / Client Sultan R. Sno Pod

TR-6 Level Loop

STA	BS	HI	FS	Eleva
BM	3.62			100.00
		103.62		
HP-1			4.71	98.91
HP-2			4.82	98.80
HP-2 ^{FP}	4.05			98.80
		102.85		
HP-1			4.50	98.35
BM			3.41	99.94

103.62

15 17

Location Reach 2 Lower

Date 7/18/07

Project / Client

TR-6 Level Loop

STA	BS	HI	FS	Eleva
BM	3.82			100.00
		103.82		
HP-1			4.91	98.91
HP-2			5.01	98.81
HP-2	4.73			98.81
		103.54		
HP-1			4.63	98.91
BM			3.54	100.00

Location Reich 2 Lower Date 7/10/07
 Project / Client Sultan R. Snod
TR-6 Bed Prof.

STA	BS	HI	FS	Eleva	Sub
-6.0		103.54	3.07		bld, sand 90
LWP: 1.0			5.26		"
4.0			5.94		bld
9.0			6.20		silt 90
15.2			7.95		lg cobs
18.0 LWE			8.96		bld 60
					bld sand 90
					" 90
RWE 108.8			8.94		bld sand 90
109.4			7.71		"
110.8			7.90		sand bld 60
113.2			6.32		"
115.3			6.25		sand bld 70
RWE 117.7			5.82		"
+6.0			5.63		"

Location Reich 2 Lower Date 07/11/07
 Project / Client Sultan R. Snod
Low Flow D & V measurements

	In	Out
Time	8:30	3:00
S.G.	12.00	12.00

Crew: M. Gagar
 T. Sullivan
 A. Weybright

Equipment: Swaffer 3602
 prop. 5A
 cal. - 0175
 Level LA Series
 SN-L45573
 AS-20

Location Reach 2 Lower Date 7/11/07Project / Client Sultan R. Sno Pod

TR-6 Level Loop & WSE

STA	BS	HI	FS	Elev	Rod
BM	3.59			100.00	
		103.59			
HP-1			4.68	98.91	
HP-2			4.79	98.80	
HP-2	4.65			98.80	
		103.45			
HP-1			4.54	4.54 98.91	
BM			3.45	100.00	
		103.45			
LWS (20.0)			8.84	94.61	
RWS (106.0)			8.84	94.61	
u/s (40')			8.83	94.62	
d/s (45')			8.85	94.60	

Location Reach 2 Lower Date 7/11/07Project / Client Sultan R. Sno Pod

TR-6 D & V

STA	Depth	Vel.	Substrate			
			Dom.	Sub.	%	Cover
LWE=18.0	0.0	0.0	bld	Lg cob	70	veg
19.0	0.70	0.05	"	"	"	"
21.5	1.65	0.01	"	"	80	u/s bld
22.0	1.20	0.23	"	"		
24.2	2.05	0.09	"	"	70	—
27.0	2.37	0.20	{	{	{	
29.0	2.70	0.32				u/s bld
		0.40				
31.5	2.55	0.17	Lg cob	bld	50	—
35.0	2.72	0.41	{	{	{	—
		0.14				
39.0	2.88	0.61		sm cob		—
		0.31				
43.0	2.82	0.51	sm cob	bld	70	—
		0.22				
47.0	2.35	0.77	bld	sm cob	50	top bld
51.0	3.08	0.84	sm cob	Lg gr.	70	—
		0.67				
55.0	2.80	0.83	Lg gr.	med gr.	60	—
		0.51				
59.0	2.70	0.56	sm cob	Lg gr.	60	—
		0.66				
63.0	2.50	0.77	"	"	70	—
67.0	2.40	0.59	"	"	70	—
71.0	2.38	0.70	"	"	"	—
75.0	2.20	0.58	Lg gr.	sm cob.	60	—
79.0	2.10	0.61	"	"	"	—
83.0	2.18	0.64	"	"	70	—
87.0	2.38	0.56	"	"	"	—
		0.58				
91.0	2.70	0.45	md gr	bld	70	—

Location Reach 2 Lower Date 7/11/07

Project / Client _____

TR-6 DE V continue

STA	Depth	Vol	Dom	Sub	%	cover
95.0	3.10	0.54 0.33	sand	sm gr	70	—
98.9	2.80	0.36 0.15	"	bl'd	60	edge bl'd
100.2	0.90	0.40	bl'd	sm cob	70	Top bl'd
101.0	2.00	0.22	"	"	"	
104.0	1.00	0.13	Lg cob	sm cob	70	
106.0	0.95	0.0	Lg cob	bl'd	60	
RWE=106.6	0.0	0.0	bl'd	silt		

Location _____ Date _____

Project / Client _____

Blank

Location Reach 2 LowerDate 7/11/07Project / Client Sultan R. Sno Pod

TR-5 Level Loop E WSE

STA	BS	HI	FS	Eleva	Rad
BM	2.13			102.00	
		102.13			
HP			2.38	99.75	
Rock			4.30	97.83	
TP					
Rock	4.20			97.83	
		102.03			
HP			2.27	99.76	
BM			2.02	100.01	
		102.03			
WSE					
32.0			4.95	97.07	
58.0			4.95		
103.0			5.52		
130.0			5.90	96.13	
167.0			5.87		
1/3 ~ 50'			6.66		2.29

Location Reach 2 LowerDate 7/11/07Project / Client Sultan R. Sno Pod

TR-5 D & V & Sub.

swamp 3602

prop 5A, Cal: 175

STA	Depth	Vel.	Dom.	Sub.	%	Cover
LWE 7.0	0.0	0.0	sand	silt	70	edge 1/50
22.0	0.55	0.34	sm cob	lg gr.	70	
26.5	0.65	0.39	"	"	"	
29.0	0.72	-0.30	"	"	"	bls
31.0	1.02	0.65	"	"	60	
34.0	0.60	0.51	lg gr	sm cob	70	
RWE 38.0	0.0	0.0	"	"	80	
40.8	out 0.25	—	"	"	"	
LWE 43.1	0.0	0.0	"	"	"	
46.5	0.50	0.50	"	md gr	60	
49.5	0.70	~0.05	"	sm cob.	80	1/3 bls
51.5	0.50	0.62	sm cob	lg cob	60	35° angle
57.7	1.63	0.53	"	bls	70	
63.0	1.45	0.32	"	lg gr.	80	
69.0	1.05	0.72	"	"	70	
73.5	0.82	0.55	"	bls		
76.5	0.55	0.45	bls	lg cob	70	45° angle
81.0	0.65	0.88	"	lg gr.	80	bls
83.0	out 0.40	—	"	"	"	
85.0	0.85	1.41	sm cob.	lg cob	60	
88.0	0.60	1.20	"	bls	60	
89.2	out 0.25	—	bls	sm cob	90	
92.3	0.60	0.39	"	"	70	

Location Reach 2 Lower Date 7/11/87Project / Client Sultan R. Sno Pvd

TR-4 Pool Level Loop & WSE

STA	BS	HI	FS	Eleva	Rod
BM	2.93			100.00	
		102.93			
HP			4.61	98.32	
Rock			3.10	99.83	
(TP)					
Rock	3.29			99.83	
		103.12			
HP			4.80	98.32	
BM			3.11	100.01	
		103.12			
LWS			7.38	95.74	
RWS			7.38	95.74	

d/s 90' on TR-3 control/culvert 7.41 95.71

Location _____ Date _____

Project / Client _____

Blank

Location Reach 2 Lower

Date 7/11/07

Project / Client Sultan R. Sno Pod.

TR-3 rubble/control Level Loop E WSE

STA	BS	HI	FS	Eleva
BUM	1.17			100.00
		101.17		
HP-1			1.85	99.32
HP-2			1.79	99.38
HP-2	1.99			99.38
		101.37		
HP-1			2.05	99.32
BUM			1.37	100.00
		101.37		
LWS (26.0)			6.28	95.09
MWS (63.0)			6.29	
RWS (99.0)			6.28	95.09
a/s ~ 60'			6.57	

Location Reach 2 Lower

Date 7/11/07

Project / Client Sultan R. Sno Pod.

TR-3 0 ± V ± Sub

STA	Depth	Vel	Down	Sub	%	Comer/Notes
LWB=16.6	0.0	0.0	med gr	sm gr.	60	—
20.30	0.30	1.72	"	lg gr.	60	—
21.0	0.1	—	bld	med gr.	80	—
23.5	0.6	2.34	med gr	lg gr	70	edge bld
28.0	0.70	2.09	lg gr	med gr	60	edge of floods
33.0	0.35	2.78	"	"	80	on rocks
38.0	0.80	1.32	"	sm cob	80	
43.0	0.88	2.26	"	"	70	10' ang
47.0	1.30	2.17	"	"	80	
51.0	2.10	1.44	sm cob	lg gr.	60	edge bld
53.5	2.00	1.07	"	lg cob	80	o/s bld
56.0	1.70	2.02	"	bld	70	
61.0	1.70	1.21	lg gr	sm cob	70	edge bld
67.5	2.05	1.39	sm cob	lg gr.	70	on bld
71.0	0.40	0.34	bld	sm cob	90	
73.0	2.20	0.46	"	lg cob	70	
78.0	2.25	0.32	lg cob	bld	60	edge bld
84.0	2.32	0.75	sm cob	"	70	Top bld
87.0	0.25	0.52	bld	sm cob	90	edge bld
90.0	2.25	0.68	sm cob	bld	60	
95.0	1.70	0.61	bld	sm cob	70	
100.0	2.40	0.10	"	lg cob	80	
105.0	2.40	0.19	"	"	"	

Location Reach 2 LowerDate 7/11/07Project / Client Sultan R. Sno Pod

TR 3 D & V Continue

STA	Depth	Vel	Dom	Subs	% / Cover
110.0					
109.7	3.05	~0.05	bld	Ly cob	80
115.0	2.18	~0.05	"	"	" ovH
118.0	1.40	~0.01	"	sm cob	90 ovH
121.0	1.12	~0.01	"	Ly cob	70 ovH
124.1	0.0	0.0	RWE		

swiffer : 3602

prop : 5A

cal : 0175

Location _____

Date _____

Project / Client _____

Blank

Location Reach 2 Lower Date 7/11/07Project / Client Sultan R. Sna. Pod.TR-2 Casc. Level Loop E WSE

STA	BS	HI	FS	Eleva	Rod
BM	2.12			100.00	
		102.12			
HP-1			2.32	99.80	
HP-2			1.40	100.72	
HP-2	1.58			100.72	
		102.30			
HP-1			2.51	99.79	
BM			2.30	100.00	
		102.30			
Lws(32.0)			5.93	96.37	
75.0			5.81	96.49	
100.0			5.71	96.59	
136.0			5.44	96.86	
d/s ~ 50'			8.19		1.36
*TR-3 u/s ~ 105			6.98		1.64
*TR-3 HP-2			1.02		

Location _____

Date 7/11/07

Project / Client _____

TR-2 Div & Substrate

STA	Depth	Vel	Dom	Sub	%	Comment
LWE → 20.5	0.0	0.0	lg gr	sm cob	70	edge
23.9	0.50	~0.08	sm cob	lg gr	80	
LWE → 27.0	out .30	—	lg cob	sm cob	70	
33.0	0.40	0.62	sm cob	lg cob	70	
38.0	0.50	0.68	"	"	80	
44.0	0.95	1.09	lg cob	sm cob	80	
49.0	1.35	2.49	lg cob	"	70	
52.9	1.30	1.39	"	"	"	u/s bld
55.5	0.55	4.04	bld	lg cob	80	top bld
57.2	2.00	3.38	bld	sm cob		edge bld
61.0	2.30	1.97	"	"	60	u/s bld
64.5	2.40	1.34	"	lg cob	80	
65.8	2.00	1.58	"	"		edge bld
69.0	0.05	~0.50	"	"	90	top bld
70.7	1.30	2.25	"	"	70	
74.5	1.70	-.30	"	"	60	u/s bld
78.4	1.85	1.82	lg cob	bld	70	
81.4	0.70	~0.05	bld	lg cob	80	u/s bld
84.0	0.95	1.81	"	"	70	
87.5	0.50	1.10	lg cob	bld		u/s
90.3	out 0.20	—	bld	lg cob	80	top bld
91.5	0.155	0.04	"	"		u/s bld
96.0	1.32	0.47	lg cob	sm cob	70	

Location Reach 2 Lower Date 7/11/07Project / Client Sultan Sma Pod

TR-2 Continue

STA	Depth	Vel	Dam	Sub	%/Cover
99.0	0.95	0.06	bld	ly cob	80 bld
104.0	0.55	0.01	"	"	90
108.0	out 0.7	—	"	"	"
111.0	0.5	0.1	~	~	80
114.7	0.05	0.1	~	~	
117.3	out 0.6	—	~	~	
119.0	0.5	0.01	~	~	
126.0	0.4	0.05	~	~	
130	out 0.4	—	~	~	
133.5	0.25	0.05	~	~	
137.5	0.30	0.01	~	~	
141.5	0.15	0.01	~	~	
143.0	out 0.70	—	~	~	
146.0	out 0.20	—	~	~	
147.5	0.50	0.01	~	~	
150.5	0.60	0.01	~	~	
152.2	out 0.60	—	~	~	
154.5	out 1.40	—	~	~	ovH
RWE=158.3	0.0	0.0	bld	silt	ovH

Location _____ Date _____

Project / Client _____

Blank

Location Reach 2 Lower Date 7/11/07Project / Client Sultan R. Sno. Pod.

TR-1 Raffle Level Loop & WSE

STA	BS	HI	FS	Eleva	Rel
BM (Rock)	0.39			100.00	Rock
		100.39			
HP			2.42	97.97	
Rock			3.26	97.13	
Rock (TP)	3.46			97.13	
		100.59			
HP			2.62	97.97	
BM			0.59	100.00	
RWS (95.0)			6.90	93.69	
MWS (59.0)			6.90		
LWS (21.0)			6.90		
w/s ~ 40'			9.83	2.96	
d/s ~ 40'			9.54	2.19	

Location Reach 2 Lower Date 7/11/07Project / Client Sultan R. Sno. Pod.

TR-1 Raffle D = V & Sub.

STA	Depth	Val	Dist	Sub.	%	Comments
LWE 13.2	0.0	0.0	Bed	sample	90	
13.6	0.10	0.0				
18.7	0.0 to 0.70	—				Top Rock
23.5	2.17	0.20		sm cob	70	edge bedrock
25.0	2.67	0.55 / 0.25	sm cob	lg gr	80	10"
29.0	2.05	1.39	"	"	70	
31.5	2.10	0.08	"	bld	70	w/s bld
34.0	2.00	1.49	"	lg gr	70	
38.0	2.00	1.26	"	"	80	
42.0	2.45	0.54	"	lg gr	60	w/s bld
45.0	2.8	0.62 / 0.73	lg cob	bld	70	
49.0	2.05	1.64	sm cob	lg gr	60	
53.0	1.45	1.49	lg gr	sm cob	60	
57.0	1.13	1.67	"	"	70	
61.0	1.00	1.49	"	"	80	
65.0	1.00	1.57	"	"	80	
69.0	1.15	1.63	med gr	lg gr	60	
73.0	1.40	0.63	"	sm gr	70	w/s bld
77.0	1.62	0.68	"	"	"	S
80.0	1.50	1.15	"	bld	60	—
84.0	1.02	0.90	lg cob, med gr		70	
87.0	0.70	0.73	bld, lg gr		80	
91.0	0.60	0.30	lg gr, bld		80	

Location Reach 2 Lower Date 7/10/07
 Project / Client Sultan P. Sino. Pod.
TR-1 D & V & Sub.

STA	Depth	Vel	Dom	Sub	%	Comments
94.0	0.83	0.34	lg gr	bld	60	—
97.5	0.0	0.0	bld	mod gr.	60	—

Location Reach 2 Lower Date 7/12
 Project / Client Mid Flow Data Sect

	In	Out
Time	8:00	3:30
S.G.	15.3/4	15.3/4

Crew: M. Gagner
 T. Sullivan
 A. Weybright

Equipment: Swoffer 3602
 Prop. SA & 5B

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sno Pod

TR-6 Level Loop E WSE

STA	BS	HI	FS	Eleva	Rod
BM	2.95			100.00	
		102.95			
HP-1			4.04	98.91	
HP-2			4.15	98.80	
HP-2	4.48			98.80	
		103.28			
HP-1			4.37	98.91	
BM			3.28	100.00	
		103.28			
LWS (22.0)			8.34	94.94	
RWS (104.0)			8.33		
d/s ~ (55.0)			10.48 (8.34)	94.94	2.14

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sno PodTR-6 DE V (500^{ft} a-transsect)

STA	Depth	Vel	Comments
LWE 17.5	0.0	0.0	
18.0	0.4	0.0	
19.0	1.0	0.10	
21.5	2.0	0.05	w/s bld cover
23.0	1.52	0.34	top bld
24.2	2.45	0.32	
27.0	2.65	0.43	
29.0	3.05	0.70	w/s bld cover
31.5	2.95	0.74	
35	3.00	0.89	
39	3.20	1.05	
43	3.02	1.02	
47	2.70	1.44	
51	3.42	1.43	
55	3.13	1.42	
59.0	3.65	1.20	
63.0	2.78	1.20	
67.0	2.77	1.31	
71	2.70	1.45	
75	2.57	1.31	
79	2.55	1.28	
83	2.40	1.07	
87	2.72	1.18	

Location Reach 2 lower Date 7/12/07

Project / Client Sultan R. Sino Pvd

TR-6 Dê V Cantikol

STA	Depth	Vel	Comments
91.0	3.65	$\frac{1.44}{0.65}$	
95.0	3.45	$\frac{0.88}{0.90}$	
98.9	3.35	$\frac{0.75}{0.34}$	
100.2	2.40	0.39	
101.0	1.75	0.38	
104.0	1.35	0.30	
106.0	1.27	0.11	OVH
106.6	0.30	0.16	
RWE 108.9	0.0	0.0	—

swaffu 3602

prop. 5A

Cal. 0175

Location _____ Date _____

Project / Client _____

[illegible]

Location Reach 2 Lower Date 7/12/07

Project / Client

TR-5 Level Loop & WSE

STA	BS	HI	FS	Eleva	Rod
BM	1.61			100.00	
		101.61			
HP			1.85	99.76	
Rock			3.78	97.83	
Rock	3.97			97.83	
		101.80			
HP			2.05	99.75	
BM			1.80	100.00	
		101.80			
<u>WSE</u>					
25.0			4.45	97.35	
63.0			4.45		
95.0			4.77		
128.0			5.25	96.55	
165.0			5.19		

in the
cascades

Location

Date 7/12/07

Project / Client

TR-5 DEVI

STA	Depth	Vel	Comments
LWE 14.4	0.0	0.0	3m woody det
17.0	0.35	0.05	
22.0	0.72	0.32	45°
26.5	0.90	0.69	
29.0	0.95	-0.03	4/5 bld
31.0	1.30	0.80	30° angle
34.0	0.92	0.83	
38.0	0.38	0.64	
40.0	0.10	0.92	
43.1	0.20	1.05	
46.5	0.78	0.86	
49.5	0.95	-0.62	4/5 bld
51.5	0.75	0.98	25° angle
57.5	1.82	0.86	
63.0	1.70	0.66	
69.0	1.38	1.45	15° angle
73.5	1.1	1.38	
76.5	0.75	0.82	
81.0	0.97	1.27	
83.0	0.10	1.55	
85.0	1.12	1.91	
88.0	0.85	2.20	
89.2	0.10	2.64	

Location Reach 2 LowerDate 7/12/07

Project / Client

TR-5 DE V Cont. inv.

STA	Depth	Vel	Comments
92.3	0.40	3.43	
96.2	0.70	1.02	up bld
100.0	1.0	2.95	
101.5	0.05	~3.00	
104.0	0.70	4.63	
106.5	out 0.80	—	
108.0	0.95	3.12	
110.0	0.85	~0.20	behind bld
114.0	0.90	3.34	
117.5	0.35	2.46	25° angle
121.5	1.40	3.47	{
125.5	1.50	2.27	
129.5	0.95	1.65	—
133.0	1.35	0.71	
137.0	1.35	0.08	up bld corner
141.5	1.00	0.84	35° angle
146.0	1.05	1.47	{
151.0	1.38	1.66	
156.0	1.55	3.93	10° angle
161.0	1.70	3.29	
166.0	1.70	3.87	
169.5	1.45	3.37	
174.5	1.80	3.32	

Location Reach 2 LowerDate 7/12/07

Project / Client

TR-5 DE V Cont. inv.

STA	Depth	Vel.	Comments
171.5	1.15	0.60	
174.6	0.40	-0.38	berkley ridge
179.0	0.0	0.0	bld corner

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sno Pad

TR-4 Level Loop & WSE

STA	BS	HI	FS	Eleva	Rad
-----	----	----	----	-------	-----

BM	2.74			100.00	
----	------	--	--	--------	--

102.74

HP-1			4.42	98.32	
------	--	--	------	-------	--

HP-2			0.98	101.76	
------	--	--	------	--------	--

HP-2	0.83		0	101.78	
------	------	--	---	--------	--

102.59

HP-1			4.28	98.31	
------	--	--	------	-------	--

BM			2.59	100.00	
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102.59

LWS (25.0)			6.36	96.23	
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RWS (113.0)			6.35		
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TR-4 HP-1	1.94	100.26		98.32	
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TR-3 HP-2			0.25	100.01	
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d/s btw TR-4 & TR-3 = 90'

Location Reach 2 Lower Date 7/12/07

Project / Client

TR-4 Pool Div & Substr.

STA	Depth	Vel	Down	Sub	%	Notes
LWE 20.2	0.0	0.0	Bld	Sand	70	veg
23.0	0.90	0.21	sand	bld	76	sand over
26.2	0.5	0.32	"	"		over
27.9	1.2	0.30	"	sm gr	70	over
33.0	1.72	0.61	sm gr	med gr	70	
38.0	2.13	0.97	sand	md gr	70	
43.0	2.48	1.05	lg gr	sand	80	
48.0	3.0	1.04	"	"	80	
53.0	3.45	1.86	lg gr	sm cob	80	
58.0	4.00	1.86	sm cob	lg gr	60	
63.0	4.45	2.11			70	
68.0	4.75	1.76			70	
73.0	5.28	1.39			80	
78.0	5.5	0.72				
83.0	5.2	0.26				
88.0	4.8	0.17				
93.0	4.4	0.11		lg cob	70	
98.0	4.45	-0.30	lg cob	bld	70	
103.0	3.45	-0.29	bed/clay	sand	90	
108.0	2.6	-0.50	"	bld	80	
113.0	1.82	-0.59	"	"	60	LUNA cover
116.0	1.08	-0.05	"	"		"
RWE 117.6	0.0	0.0	lg cob	sand	70	over

* smooth 3602 prop 5B Fall 0125 *

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sino Pod

TR-3 Riffle Level Comp & WSE

STA	BS	HI	FS	Eleva	Redo
BM	1.57			100.00	
		101.57			
HP-1			2.25	99.32	
HP-2			2.20	99.37	
HP-2	2.09			99.37	
		101.46			
HP-1			2.15	99.31	
BM			1.46	100.00	
		101.46			
LWS (19.0)			5.98	95.50	
MWS (70.8)			5.92	95.54	
RWS (114.0)			5.91		

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R.

TR-3 Riffle D & V

Smoothing: 3602

PROP: 5A

CAL: 0175

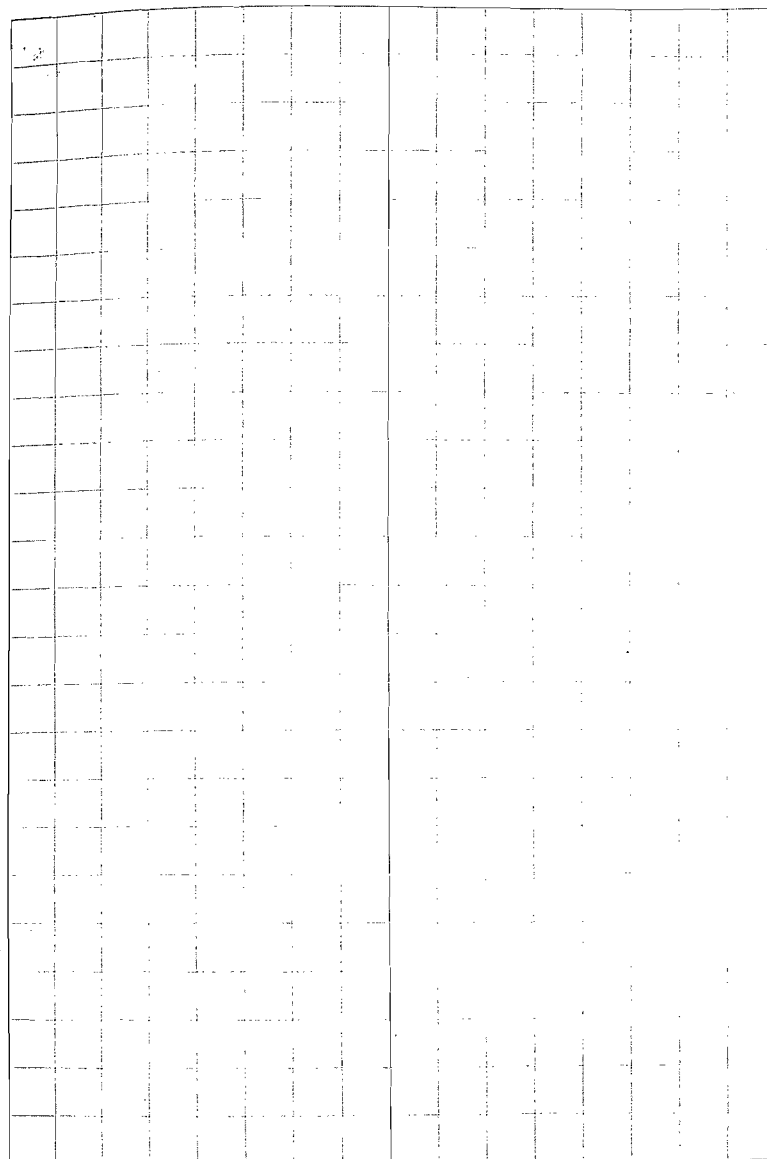
STA	Depth	Vp0	Comments
LWE			
* → 11.5	0.0	0.0	SVH/veg
16.6	0.50	2.08	→
20.3	0.80	2.19	
21.0	0.25	2.41	
23.5	1.10	2.30	110° angle
28.0	1.15	2.38	
33.0	0.90	2.82	
38.0	1.20	2.05	
43.0	1.35	2.72	
47.0	1.8	2.36	
51.0	2.55	2.28	20° angle
53.5	2.50	2.74	
56.0	2.13	1.76	
61.0	2.20	2.43	
67.5	2.50	2.17	
71.0	0.85	0.76	
73.0	2.65	0.55	W/S bld cover
78	2.72	0.17	"
84	2.75	1.83	
87	0.70	0.52	
90	2.65	1.61	
95	2.10	0.95	
100.0	2.90	1.24	
* 12.5	6.5	0.01	SVH/veg

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R.TR-3 Ridge D.V Continue

STA	Depth	Vel	Comments
105.0	3.05	$\frac{0.22}{0.24}$	
109.7	3.55	$\frac{.05}{0.05}$	
115.0	2.72	$\frac{0.03}{.03}$	
118.0	2.90	$\sim .01$	OVH
121.0	1.60	$\sim .01$	OVH
124.1	0.40	$\sim .01$	OVH
RWE = 125.8		0.0 0.0	

Location _____ Date _____

Project / Client _____



Location Reach 2 Lower Date 7/12/07
 Project / Client Sultan R. Sno Pod
TR-2 Casc. Level Loop & WSE

STA	BS	HI	FS	Eleva	Rd
BM	1.92			100.00	
		101.92			
HP-1			2.13	99.79	
HP-2			1.19	100.73	
HP-2	1.13			100.73	
		101.86			
HP-1			2.08	99.78	
BM			1.86	100.00	
		101.86			
<u>WSE</u>					
148.0			4.54	97.22	
119.0			4.57		
80.0			4.94	96.92	
51.0			4.87		
21.0			5.07	96.79	
d/s ~ (50.0)			7.68	95.87	1.69
TR-3 HP-					

Location Reach 2 Lower Date 7/12/07
 Project / Client Sultan R. Sno Pod
TR-2 Casc. D & V

Swiffer 3602
 Proj 5A
 Cal 0175

STA	Depth	Vel	Comments
15.6	0.0	0.0	
20.5	0.35	0.39	
23.9	0.90	0.84	
27.0	0.10	0.10	
33.0	0.80	1.67	
38.0	1.1	3.07	
44.0	1.45	2.63	
49.0	1.65	3.43	
52.9	1.72	2.28	
55.5	1.02	4.72	
57.2	2.52	5.5	
61.0	2.75	4.67	
64.5	2.90	2.94	
65.8	2.55	1.34	
69.0	0.35	3.34	
70.7	1.90	3.80	
74.5	2.08	-1.10	u/s bld, vel break
78.4	2.30	2.01	
81.4	1.70/2	2.20	
84.0	1.30	2.93	
87.5	0.82	2.41	u/s vel 75° angle
90.3	0.15	0.56	top bld 75° angle
91.5	1.90	1.29	

Location Reach 2 Lower Date 7/12/57

Project / Client _____

TR-2 D & V Contour

STA	Depth	Vel	Comments
96.0	1.62	1.04	
99.0	1.35	0.36	
104.0	0.70	~0.01	
108	out 0.3	—	
111.0	0.80	0.38	75° angle
114.7	0.40	0.16	"
117.3	out 0.35	—	
119.0	0.90	~0.03	
126.0	0.80	0.29	
130	0.05	0.42	
133.5	0.60	0.57	
137.5	0.75	0.79	60° angle
141.5	0.60	~0.07	
143.0	out 0.30	—	
146.0	out 0.80	—	
147.5	0.90	~0.05	
150.5	1.00	0.11	
152.2	out 0.2	—	
154.5	out 1.0	—	
158.3	0.45	0.0	
* 158.4	0.0	0.0	
+ 16.0	0.1	1.46	30.0
* 17.3	out 0.5	—	77.0
* 19.5	out 1.0	—	2.40
			2.37

Location _____

Date _____

Project / Client _____

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sra. Aud.TR-1 Rifle Level Loop & WSE

STA	BS	HI	FS	Eleva	Red =
BIM	0.29			100.00	
		100.29			
HP			2.32	97.97	
Rock			3.16	97.13	
Rock	3.35			97.13	
		100.48			
HP			2.51	97.97	
BIM			0.48	100.00	
		100.48			
RWS (93.0)			6.28	99.80	
MWS (61.0)			6.29		
LWS (20.0)			6.27		
1/5 " 50.0			8.35	1.80	
0/5 " 50.0			9.52	3.29	

Location Reach 2 Lower Date 7/12/07Project / Client Sultan R. Sra. Aud.TR-1 D & V

STA	Depth	Vel	Comments
LWE = 11.4	0.0	0.0	
13.2	0.5	0.0	
13.6	0.65	0.05	
18.7	0.20		
23.5	2.72	0.40	15' angle
25.0	3.20	0.50	
29.0	2.72	1.74	10' angle
31.5	2.68	1.77	9/5 old
34.0	2.70	1.90	10' angle
38.0	2.60	2.01	
42.0	2.90	1.87	0/5 old
45.0	3.2	1.60	
49.0	2.6	2.34	
53.0	1.98	2.10	
57.0	1.65	2.03	
61.0	1.50	2.14	
65.0	1.50	2.28	
69.0	1.70	2.04	
73.0	1.95	1.15	0/5 old
77.0	2.12	0.45	0/5 old 2.5', 0.4' old
80.0	2.02	1.34	
84.0	1.52	.97	

Location Ranch 2 Lower Date 7/12/07Project / Client Sultan R. Sno PodTR-1 Raffle D & V continue

STA	Depth	Vel	Comments
87.0	1.22	0.99	
91.0	1.10	0.84	
94.0	1.20	0.64	
97.5	0.50	1.01	
RWE=101.4	0.0	0.0	

Location _____

Date _____

Project / Client _____

Δ in WSE for TR-1 thru TR-6

	<u>L</u>	<u>in</u>	<u>H</u>
TR-1	93.69	94.20	94.71
TR-2	96.37	96.79	97.28
TR-3	95.09	95.52	95.92
TR-4	95.74	96.23	96.70
TR-5	97.07	97.35	97.64
TR-6	94.61	94.94	95.34

Location Sultan R. Date 7/13/07Project / Client Instream Flow StudyReach 2 Lower

	In	Out
Time	8.00	3.30
S.G	19 1/2	19 1/2

Crew: M. Gagner
A. Weybright
T. Sullivan

Equipment: Swaffer 3602
prop 5A
cal 0175

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-6 Level Loop = WSE

STA	BS	HI	FS	Elev	Red
BM	3.13			100.00	
		103.13			
HP-1			4.22	98.91	
HP-2			4.33	98.80	
HP-2	4.20			98.80	
		103.00			
HP-1			4.09	98.91	
BM			3.00	100.00	
LWS (19.0)			7.66	95.34	
RWS (106.0)			7.66	95.34	
v/s 45			10.95		3.27

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-5 Level Loop & WSE

STA	BS	HI	FS	Eleva	Red
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BM	2.31			102.00	
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102.31

HP-1			2.57	99.79	
------	--	--	------	-------	--

Rock			4.48	97.83	
------	--	--	------	-------	--

HP

Rock	4.38			97.83	
------	------	--	--	-------	--

102.21

HP-1			2.45	99.76	
------	--	--	------	-------	--

BM			2.20	100.01	
----	--	--	------	--------	--

102.21

WSE					
-----	--	--	--	--	--

22.0			4.57	97.64	
------	--	--	------	-------	--

66.0			4.57		
------	--	--	------	--	--

94.0			5.01		
------	--	--	------	--	--

127.0			5.18		
-------	--	--	------	--	--

166.0			5.05		
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148			5.07		
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Location Reach 2 Lower Date 7/13/07

Project / Client

TR-5 DE V

STA	Depth	Vel	Comments
15.5	0.0	0.0	SVIT
14.4	0.30	0.0	OVIT
17.0	0.65	0.0	
22.0	1.10	0.20	45° angle
26.5	1.20	0.20, 48	45° angle
29.0	1.18	0.05	1/3 bld
31.0	1.55	0.98	
34.0	1.15	1.10	
38.0	0.6	1.09	
40.0	0.42	1.42	
43.1	0.62	0.82	15° angle
46.5	0.57	0.52	
49.5	0.70	0.07	1/3 bld
51.5	1.00	1.41	
57.5	2.00	1.24	
63.0	1.93	0.75	
69.0	1.65	1.42	15° angle
73.5	1.40	2.03	10° angle
76.5	1.0	0.57	1/3 bld
81.0	1.20	2.31	
83.0	0.35	3.47	
85.0	1.40	2.38	
88.0	1.10	2.02	

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-5 D & V Continue

STA	Depth	Vel	Comments
89.2	0.35	3.96	
92.3	0.20	2.71	
96.2	1.00	2.16	
100.0	1.15	4.11	
101.5	0.35	4.68	
104.0	0.90	5.06	
106.5	0.50	—	top bld
108.0	1.25	3.38	
110	1.40	2.49	mid bld
114.0	1.40	2.81	
115.5	0.70	4.63	
117.0	1.80	3.30	
121	2.05	3.28	
125	1.45	0.82	o/s bld
128.5	1.75	0.69	"
133	1.70	.03	
137.0	1.50	0.93	
141.5	1.50	1.44	
146	1.27	2.03	
151	2.05	4.76	
156	2.15	3.74	
161.0	2.20	4.28	
166.0	2.00	3.95	

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-5 D & V Continue

STA	Depth	Vel	Comments
169.5	2.25	3.23	
171.5	1.80	1.48	
174.6	1.15	0.58	
179.0	0.60	0.0	
179.1	0.0	0.0	

70 Location Beach 2 Lower Date 3/13/07

Project / Client

T2-4 Local Cond = 1053

STA	B.S	HI	FS	Eleva	Red
-----	-----	----	----	-------	-----

3M 272

100.00

102. 72

HP-2

0.96

101.76

KP-1

440

98.32

HP-1 4.27

98.32

102.59

HP-2

17.82

161.77

3m

258

99.99

LWS ()

589

9/6 70

RWSL

587

Location

Date _____

Project / Client

Location

Ranch 2 Lower

Date

7/13/07

Project / Client

TR-3 P. 116 / Initial Level Survey - NISE

STA

BS

HI

FS

Elev. Rod

BM

0.37

100.00

100.37

HP-1

1.05

99.32

HP-2

1.00

99.37

HP-2

1.80

99.37

101.17

HP-1

1.85

99.32

BM

1.17

100.00

LWS (170.0)

5.25

95.92

MWS 70.0

5.15

RWS (120.0)

5.16

Location

Ranch 2 Lower

Date

7/13/07

Project / Client

TR-3 D & V

STA	Depth	Vel	Comments
11.1	0.0	0.0	
16.6	1.00	2.28	
20.3	1.25	2.82	
21.0	0.75	3.09	
23.5	1.55	2.49	100.00
28.0	1.5	2.86	
33.0	1.10	3.60	
38.0	1.75	2.57	
43.0	1.85	3.27	
47.0	2.30	3.07	
51.0	2.05	3.04	
54.5	2.00	2.95	1.64
56.0	2.65	3.40	1.82
61.0	2.65	1.92	2.53
67.5	3.10	2.86	2.88
71.0	1.35	1.87	
* 12.5	0.15	1.48	up 6.1
73	3.12	0.69	
78	3.22	1.03	0.87
84	3.2	1.14	0.90
87	1.20	2.49	0.72
90	3.20	1.48	
95	2.72	1.38	0.93
		1.29	1.22

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-3 D.E.V continue

STA	Depth	Vel	Comments
100.0	3.45	1.52	13
105.0	3.55	0.83	0.74
109.7	3.95	0.11	0.25
115	3.30	0.01	0.0
118	2.40	~ .01	OVH
121	2.15	~ .01	OVH
124.1	0.85	~ .01	OVH
125.8	0.48	~ .01	
125.9		0.0	

Location Reach 2 Lower Date 7/13/07

Project / Client

TR-2 Level Camp & HSE

STA	BS	HT	FS	Height	Red
B.M.	1.94			100.00	
HP-1		101.94	2.15	99.79	
HP-2			1.21	100.73	
HP-2		101.94	1/2	100.73	
LWS 19.0			4.71	97.23	
MWS 154.0			4.49		
" 73.0			4.62		
100.03			4.57		
105.0			4.28		
150.0			4.10	97.84	

Location Reach 2 LowerDate 7/13/07

Project / Client

TR-2 D & V

STA	Depth	Vel	Comments
^{LINE} 13.7	0.0	0.0	LINE
15.6	0.40	2.89	
16.0	0.40	3.24	
17.3	^{out.} -0.20	-	
19.5	.65	.05	
20.5	0.50	2.11	
23.9	1.25	2.59	
27.0	0.6	1.30	
33.0	1.4	2.74	
38.0	1.60	4.24	
44.0	1.95	3.53	
49.0	2.20	4.32	
52.9	2.25	3.13	
55.5	1.50	6.06	
57.2	0.05	1.31	
61.0	3.20	4.86	
64.5	3.2	2.11	
65.0	2.90	1.27	
69.0	0.75	4.08	
70.7	2.30	3.45	
74.5	2.50	0.31	
76.4	2.78	2.41	
78.1	2.68	2.25	

Location Reach 2 LowerDate 7/13/07

Project / Client

TR-2 D & V continue

STA	Depth	Vel	Comments
78.4			
81.4	1.79 1.90	0.12	
84.0	1.75	2.64	
87.5	1.25	.11	w/s vel break
90.3	0.50	1.29	top bld.
91.5	2.30	0.99	
96.0	2.10	1.41	
99.0	1.70	0.84	
104	1.05	1.08	45° angle
108	0.15	1.24	75° angle
111	1.20	0.95	"
114.7	0.80	0.05	
117.3	0.15	1.93	55° angle
119	1.30	0.52	
126	1.20	3.49	
130	0.45	1.75	
133.5	1.05	1.06	
137.5	1.15	1.92	60° angle
141.5	1.05	0.93	85° angle
143.0	0.25	1.50	"
146.0	0.45	-	
147.5	1.32	0.14	
150.5	1.35	0.27	SVH

Location Reach 2 Lower Date 7/13/07Project / Client Sultan R. Sno PodTR-2 Case. D & V Center

STA	Depth	Vol	Comments
153.2	0.25	.17	
154.5	out 0.60	—	
158.3	0.70	0.01	
158.4	0.0	0.0	RWE

Swiffer - 3402
 prop - 5A
 Cal - 0175

Location Reach 2 Lower Date 7/13/07Project / Client Sultan R. Sno PodTR-1 R. J/L Level Loop & WSE

STA	BS	HI	FS	Eleva	Rad
BM	0.62			100.00	
		100.62			
HP			← 2.66		97.96
Rock			← 3.50		97.12
⊙					
Rock	3.41				97.12
		100.53			
HP			2.53		97.95
BM			2.59		97.99
BM	0.42			100.00	
		100.42			
HP			2.45		97.97 ✓
RWS (94.8)			5.68		94.34
MWS (67.0)			5.67		
			5.62		
			5.62		
LWS (20.0)			5.91		
ASW (50.0)			5.54		
ASW (47.5)					

Location Reach 2 Lower Date 7/13/07

Project / Client

* Swaffer 4441 prop 7A
TR-1 Riffle D E V cal - 0186

STA	Depth	Vel	Comments
11.1	0.3	0.0	
11.4	0.5	~.01	
13.2	1.12	-.27	
13.6	1.25	-.44	
13.7	.50	-.41	
23.5	3.27	.27	
25.0	3.8	0.72	
29.0	3.40	2.09	
31.5	3.25	2.20	
34.0	3.15	2.34	
38.0	3.05	2.32	
42.0	3.40	2.83	
45.0	3.75	2.29	
49.0	3.12	2.89	
53.0	2.52	3.03	
57.0	2.20	2.75	
61.0	2.07	2.88	
65.0	2.10	2.90	
69.0	2.30	2.79	
73.0	2.55	2.75	
77.0	2.70	1.55	
80.0	2.60	1.88	
84.0	1.95	1.81	
		1.08	

Location Reach 2 Lower Date 7/13/07Project / Client Sultan R. Sno

TR-1 Riffle D E V Continue

STA	Depth	Vel	Comments
87	1.80	1.09	
91.0	1.68	1.33	
94.0	1.75	1.27	
97.5	1.00	1.53	
101.4	0.70	1.27	
102.5	0.5	.19	
* LWE = 11.0 0.0 0.0			
RWE = 104.7 0.0 0.0			
* Swaffer - 4441 *			
prop - 7A			
cal - 0186			

Location Reach 2 LowerDate 10/19/07

Project / Client _____

	In	Out
T.m	2:15	4:40
S.G	1.0	1.0

Crew

equipment

Location _____

Date 10/19/07

Project / Client _____

TR-6 Run/6-lane (2.15)

STA	BS	HI	IS	Eleva
BM	2.80	102.80		100.00
HP-1			3.89	98.91
LWS			7.12	95.68

Photo

#	TR-6	L ⁺ → R ⁺
2	"	2/s
3	"	6/s

Location R2 LowerDate 10/19/07

Project / Client

TR-5 wide/ditch (2.35)

STA	BS	HI	FS	Eleva
BM	2.44			100.00
		102.44		
HP			2.69	99.75
LWS			4.49	97.95
(left) mws			5.17	
(right) mws			4.94	

Photos

4- Lt → Rt
 5 v/s Lt
 6 v/s Rt

Location

Date

Project / Client

TR-4 Pool (2.50)

STA	BS	HI	FS	Eleva
BM	2.75			100.00
		102.75		
HP-2			0.99	101.76
LWS			5.60	97.15

Photo

Lt → Rt
 v/s
 v/s

Location _____ Date _____

Project / Client _____

TR-3 Spawning R. J. G. (3:10)

STA	BS	HI	FS	Eleva
-----	----	----	----	-------

BM	2.13			100.00
----	------	--	--	--------

102.13

HP-1			2.82	
------	--	--	------	--

LWS			5.78	96.35
-----	--	--	------	-------

Location _____ Date _____

Project / Client _____

TR-2 Conc. (3:30)

STA	BS	HI	FS	Eleva
-----	----	----	----	-------

HP-2	2.25			100.73
------	------	--	--	--------

102.98

LWS			5.21	97.77
-----	--	--	------	-------

TR-1 glide (4:30)

STA	BS	HI	FS	Eleva
-----	----	----	----	-------

BM	0.69			100.00
----	------	--	--	--------

100.69

HP-1			2.72	
------	--	--	------	--

RWS			5.61	95.08
-----	--	--	------	-------

mws			5.55	
-----	--	--	------	--

Reach 2 Lower

	BS	HI	FS	EL	D
TR 6					
BM	4.00	104.00		100	
HP 6			5.08		
RWSE			7.55	96.45	—
TR 5					
BM	4.34	104.34		100.00	
HP 5			4.60		
RWSE (cdm water near sluice)			5.76		
RWSE (towards cascade 250' out)			5.93		
TR 4					
BM	3.76	103.76		100.00	
HP 4			5.45		
RWSE			5.93		
TR 3					
BM	3.72	103.72		100.00	
HP 3			4.41		
RWSE			6.66		

Location

Date _____

Project / Client

13 a

104.66

7.55

96.45

104.34

4.60

(99.74)

913.12

~~104.34~~

5.76

(98.58)

103.72

~~104.34~~

5.93

97.83

103.72

6.66

97.06

Location _____ Date _____

Project / Client _____

TRZ	BS	HI	FS	EL	D
HPZ	2.81	103.54		100.73	
RWSE			5.25	98.29	

TRI	BS	HI	FS	EL	D
EMI	1.71	101.71		100.00	
HPI			3.74		
RWSE			5.66		

Location _____ Date _____

Project / Client _____

100.73

2.81

103.54

- 5.25

98.29

101.71

5.66

96.05

1628.03
1003

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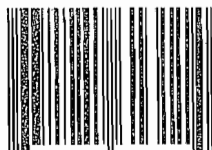
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Sultan River
Reach 1 B

DURA *Rite*
WATERPROOF
LEVEL
No. 613

Sno Pod
Jackson Project
Instream Flow Study
1628.03

[illegible]

July 18, 07

Instream Flow Study

Reach / B

Crew: M. Gagner
A. Weisberg
T. Sukhrie

Equipment:	Swiffer	4099
	props	54
	coll	0175

	I_h	0A
Time	8:15	10:30

Reach	1.B	TR-1	Level loop	7/18/07 LWSE
STA	BS	HI	FS	Eleva Rod
BM	3.52			100.00
		103.52		
HP			2.35	101.17
Rock			7.55	95.97
(TP)				
Rock	7.37			95.97
		103.34		
HP			2.16	101.18
BM			3.34	100.00
LWS (24.0)			8.13	
58.0			7.75	95.59
90.0			7.65	
126.0			7.55	95.79
171.0			7.38	
u/s ~ 50'			7.23	96.11
d/s ~ 50'			8.38	

Reach	1.B	R. bble	TR-1	DEV	7/18/07
STA	Depth		Vel		Comments
LWSE = 16.2	0.00		0.0		
23.0	.35		1.4		
25.5	out 0.8		—		top bld
26.5	0.7		0.60		
33.0	0.78		1.28		30° angle
37.5	0.90		0.09		u/s bld vel. break
41.0	1.10		0.90		
49.5	0.10		~1.0		85° angle res. gr. bar
54.5	0.3		0.44		
61.0	1.10		0.24		
66.0	1.28		0.92		
70.0	1.55		2.14		
76.0	1.22		1.90		
81.0	1.88		0.12		u/s bld, vel break
87.7	0.30		2.79		top bld
90.0	1.75		1.63		
96.0	1.55		1.39		u/s bld
101.0	1.28		0.99		
107.0	2.20		2.18	1.98	
113.0	1.80		2.05		top bld
119.0	2.92		2.76	1.44	
122.5	1.1		3.75		top bld
124.5	3.2		3.27	0.51	

7/18/02

Reach	LB	TR-1	D: V	contin
STA	Depth	Vel	Comments	
131.0	3.45	2.84 / 2.01		
135.7	3.15	3.69 / .37	edge bld	
139.0	2.90	0.43 / .30	v/s bld (0.4.0', -45 deg)	
144.0	3.55	2.84 / 1.06	edge bld	
150.0	3.40	3.36 / 1.86		
156.0	3.40	3.00 / 1.11		
162.0	3.68	1.71 / 0.79		
167.0	0.58	0.94	on bld	
171.0	1.65	.06	v/s bld	
177.3	0.80	.05		
RWE=177.4	0.0	0.0	edge bld	

LWP=1.0

RWP=199.8

suffin - 40.99

cal: 0.175

pmp 5A

Reach 1 B		TR-2 Loop < WSE		7/18/07
STA	BS	HI	FS	Elev
BM	0.39			100.00
		100.39		
HP			1.51	98.88
Rock			5.36	95.03
(TP)				
Rock	5.33			95.03
		100.36		
HP			1.48	98.88
BM			0.36	100.00
		100.36		
WSE				
19.0			6.53	93.83
80.0			6.53	
140.0			6.55	93.81
v/s ~ 45.0'			6.52	93.84
2/s ~ 50'			6.63	93.73

Reach 1 B		TR-2 R. Pth D & V		7/18/07
STA	Depth	Vel	Comment	
LWP=1.0				
LWE=14.1	0.0	0.0		
19.0	.82	.06		
21.5	1.0	0.22		
27.0	1.62	0.65		
28.5	1.85	1.35		
33.0	1.90	1.72		
38.0	2.2	1.18		
43.0	2.2	2.77		
47.2	1.35	2.19	edge bld	
48.5	1.53	2.68	top bld	
52.5	3.20	2.98	edge bld	
56.0	2.82	1.91	up bld	
59.0	2.90	2.81	edge bld	
64.0	2.70	2.62		
69.0	2.70	1.49		
74.0	2.60	1.99		
79.0	2.80	2.14		
84.0	2.65	1.95		
89.0	2.67	1.73		
94.2	3.65	1.62		
99.0	4.00	1.19		
102.5	2.78	1.89		

Reach 1 B TR-2 Continue 07/18/07

STA	Depth	Vel	Comments
106.0	3.25	1.41/.87	
111.0	3.20	1.10/.86	
116.0	3.30	1.15/.56	
121.0	3.42	1.13/.81	
126.0	3.50	1.13/.38	
131.0	2.95	1.23/.30	
136.0	2.45	0.61	
141.0	1.90	0.26	
146.0	0.50	~0.03	

RWE = 148.6 0.0 0.0

RWP = 160.6

swiffer: 4099
cal: 0175
prop: 5A

Reach 1 B

Sultan R.

Instream Flow Study

July 19, 2007

Crew: M. Gagner
T. Sullivan
A. Weybright

	In	Out
Time	8:00	10:00

Reach 1 B TR-1 Loop & WSE 7/19/07				
STA	BS	HT	FS	Elev. a
BM	3.78	103.78		100.00
HP			2.59	101.19
Rock			8.75	95.03
(TP)				
Rock	8.55	103.58		95.03
HP			2.39	101.19
BM			3.58	100.00
BM	0.66			100.00
		100.66		
WSE				
LWS (36.0)			5.84	
(67.0)			5.44	95.22
(95.0)			5.41	
(126)			5.34	98.32
RWS (159.0)			5.22	
u/s ~ 60'			5.01	95.65
d/s ~ 60'			6.07	

Reach 2 B TR-1 D & V 7/19/07			
STA	Depth	Vel	Comments
LWB 26.4	10.0	0.0	LWB
26.5	.25	.01	
33.0	.25	~ .05	
37.5	.45	.01	
41.0	.58	.23	
49.5	abt. 20	exp. no gravel bar	46.1 wet edge 52.4 wet edge
54.5	0.5	.01	
61.0	0.8	.03	
66.0	.85	.96	
70.0	1.20	1.73	
76.0	0.82	1.50	
81.0	1.78	0.16	u/s bld
87.7	0.0	—	top bld
90	1.20	1.50	
96	1.08	0.68	u/s bld
101.6	1.20	0.88	
107	1.78	.88	
113	1.95	2.06	
119	2.55	2.83 / 39	
122.5	.67	3.08	top bld
124.5	2.82	2.57 / 1.26	
131.0	3.05	2.08 / 1.25	
135.7	2.75	1.01 / 1.28	

TR-1 Rifle Reach 1B 7/19/07

STA	Depth	Vel	Comments
139	2.42	0.25	
144.3	3.07	2.45 .84	v/s bld
150	2.95	2.74 1.43	edge bld
156.0	2.95	2.11 0.48	
162	3.2	1.01 .76	
167	.15	0.75	
171.0	1.15	0.03	
177.2	0.30	0.01	
177.3	0.0	0.0	RWE

RWP = 199.8

swaffer: 4099

prop: 5A

cal: 0175

Reach	IB	TR-2	Riffle	7/19/07	
STA	BS	HI	FS	Eleva	
BAN	0.24	100.24		100.00	
HP			1.35	98.89	Left bank
Rock			5.82	98.42	
TP					
Rock	5.72	100.14		98.42	
HP			1.25	98.89	
BM			6.13	100.01	
WSE		100.14			
LWS (26.0)			6.87	93.27	
(81.0)			6.88	93.26	
(132.0)			6.92	93.22	
u/s ~ 50'			6.91	93.23	
d/s ~			6.97	93.17	

TR-2	Riffle	RIB	7/19/07
STA	Depth	Vel	Comments
LWE 17.7	6.0	0.2	
19.0	.30	.01	
21.5	.45	.35	
27.0	1.05	.26	
28.5	1.30	.23	
32.0	1.38	1.76	
38.0	1.80	.94	
43.0	1.65	2.27	
47.2	1.80	1.46	
48.5	1.10	2.37	
52.5	2.67	2.07 1.08	
56.0	2.30	1.01	
59.0	2.35	.98	
64.0	2.10	.71	
68.0	2.10	1.81	
74.0	2.05	.64	
79.0	2.32	.22	
84	2.03	.73	
89	2.10	.74	
94.2	3.08	1.29 .89	
99.0	3.50	1.05 .10	
102.5	2.2	0.84	

TR-2 Risk

NEV Condi

STA	Death
-----	-------

10

Comings

TR-1

Map

Reed 1B

7/19/07

106.D

270

~~1.05~~ 47

111

2.65

~~1.32~~ 0.99

116

2.72

~~79~~ 43

121

2.83

~~.89~~

126

2.97

~~86~~ 33

131

2.45

932

obj. cover	LWA
------------	-----

136

192

0.71

141

1,35

0.50

196

D.C.

D.D

RUE 146.0

$$R_{wp} = 160.6$$

A hand-drawn map on grid paper. The map features a large body of water on the left, a river or inlet on the right, and a central landmass. A horizontal line with 'X' marks at both ends crosses the map. Labels include 'Landed' at the top, 'Bran' and '101' on the right, and 'Hill' and 'Hill' on the left. A small arrow points to the right at the bottom. There are also some scribbles and a small 'X' mark on the right side.

Reach	IB	TR-1	Loop	WSE	7/20/07
STA	BS	HI	FS	Elev	Subst.
BM	3.71	103.71		100.00	1
HP			2.55	101.16	101.17
Rock			7.76	95.95	
Ⓟ					
Rock	7.50	103.45		95.95	
HP			2.28	101.17	
BM			3.45	100.00	
BM	1.15			100.00	
		101.15			
LWP = 1.0			1.25		blt veg 60
3.9			3.97		"
8.0			4.51		sand old 70
11.9			4.91		"
14.3			5.82		sand old 60
18.0			6.27		"
15.6			5.20		"
23.0			6.31		med gr bld
25.6			5.22		"
26.8			6.64		med gr lg gr
RWE = 30.5			6.53		lg gr bld 70

TR-1	WSE	Bnd. Profile	7/20/07
STA	BS	HI	FS
RWS (42.0)			6.61
67.0			94.54
99.0			6.26
134.0			94.89
			6.28
RWS 159			94.8
			6.26
RWA = 177.2			6.19
179.1			6.17
183.0			4.47
188.4			4.52
190.1			4.12
193.5			5.11
196.8			4.04
RWP = 199.8			3.52
+6.0'			2.42
			1.95
d/s ~ 50'			6.67
u/s ~ 60'			5.94

blt lg cob 70

" "

" "

" "

" veg 60

" 60

veg bld 70

11

"

Reach	IB	TR-1	D	V	Sub	7/20/07
STA	Depth	Vel	Dm	Sub	% Cover	
LWE = 30.3			Lg gr	bld	sm cob/bld 70	
33.0	.05	—	sm cob	bld	70	
37.5	.15	~.01	"	"	70	
41.0	.32	~.03	Lg cob	bld	60	
* 42.5	out 0.60	—	md gr	Lg gr	70	
54.5	out 0.20	—	bld	Lg cob	70	
* 61.0	.52	.03	Lg gr	sm cob	70	
66.0	.50	.40	bld	Lg cob	60	
70.0	.95	1.40	"	sm cob	60	
76.0	.35	1.24	"	Lg cob	60	
81.0	1.40	0.10	"	"	"	
87.7	out .40	—	"	"	60	
90	1.02	.73	"	"	60	
96	0.70	.63	"	"	"	
101.6	.60	.55	"	"	"	
107	1.48	.62	"	"	"	
113	1.68	1.91	bld	Lg gr	70	
119	2.50	2.32	"	"	"	
122.5	.35	2.73	"	"	90 ^{tip} _{wd}	
124.5	2.32	1.82	"	Lg cob	70	
131	2.65	1.81	"	"	"	
135.7	2.35	1.09	"	"	"	

TK-1	continue				7/20/07
STA	Depth	Vel	Dm	Sub	% Cover
139.0	2.12	0.15	bld	sm gr	70 bld
144.3	2.78	2.28 / 1.30	"	Lg cob	60
150	2.50	1.63	"	"	{
156	2.60	1.50 / .33	"	sm cob	{
162	2.85	0.91 / .38	"	"	{
167	out .30	—	"	"	{
171	0.80	~.01	"	Lg cob	70
177.2	0.0	0.0	"	"	
RWIP = 199.8					
* 42.5	0.0	0.0	md gr	Lg gr	70
* 56.8	0.0	0.0	bld	sm cob	80

7/20/07

Reach 1 B	TR-2	Lump	i Bank	Profile
STA	BS	HI	FS	Subst.
BM	2.61	102.61		100.00
HP			3.72	98.89
Rock			7.01	94.80
(TD)				
Rock	7.70	102.50		94.80
HP			3.60	98.90
BM			2.49	100.01
LWP=1.0			4.07	veg/bld 90
2.4			3.47	" 70
3.6			5.04	bld/bld 90
5.4			5.42	"
6.9			6.85	bld 70
8.5			7.28	" 80
12.4			7.93	sand bld 90
14.3			8.65	"
18.5			9.44	md gr bld 60
LWB=21.3			9.60	sm cob 60
LWS (28.0)			9.65	92.85
MWS (78.0)			9.72	
RWS (139.0)			9.77	
RWE=145.1			9.74	
149.0			8.75	sand bld 80

Reach 1 B

TR-2

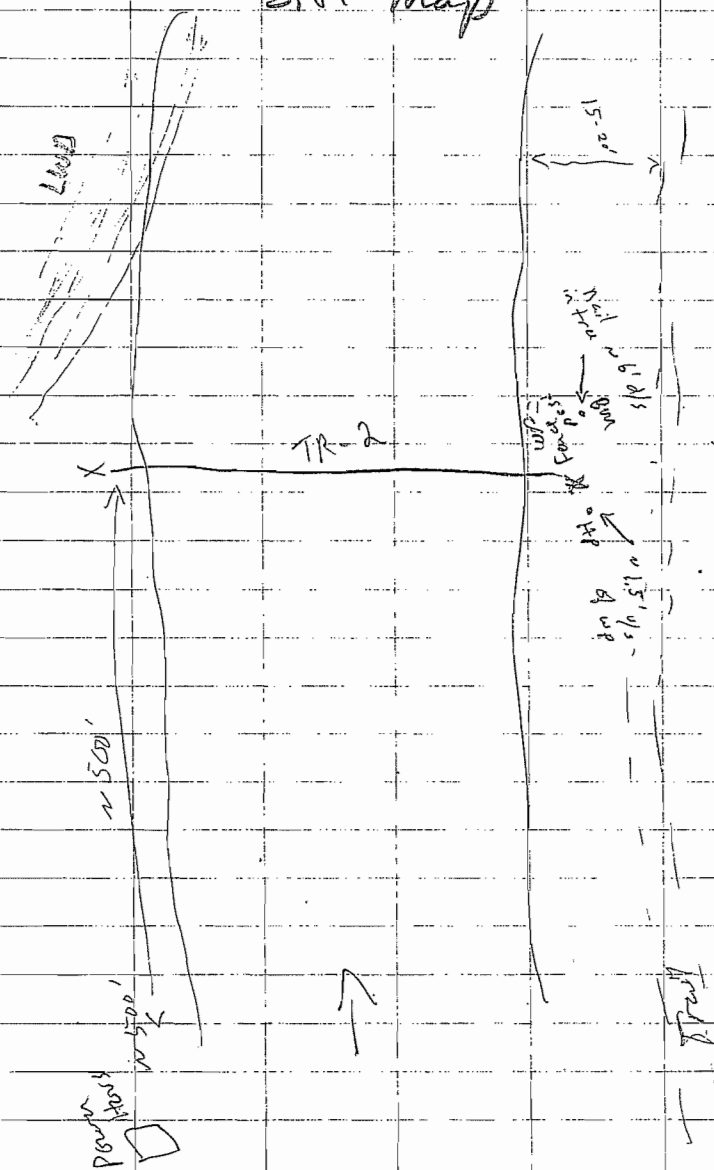
7/20/07

STA	BS	HI	FS	Eleva	Subst.
151.8			8.41		Hd 60 sand
153.3			6.19		fr " "
154.8			7.02		bld 80
157.6			6.81		veg " "
158.9			5.53		
RWP 160.6			5.22		
+5.0'			3.30		
6/s "50'			9.73		
8/s "60'			9.75		

Reach 1 B	TR-2	D & V	Subst	7/20/07	
STA	Depth	Vel	Dam.	Sub.	% Cover
19.2	5.0	0.0	sm cob	Lg gr	70
19.0	↓ 0.5	↓ 0.01	↓ "	↓ "	↓ "
26.5					
27.0	0.65	0.29	Lg gr	sm cob	60
28.5	0.85	.15	"	"	70
33.0	0.90	1.48	md gr	Lg gr	"
38.5	1.42	0.47	Lg gr	md gr	60
43	1.25	1.78	"	bld	70
47.2	1.40	0.98	bld	Lg gr	80
48.5	0.75	2.21	"	Lg cob	90 ^{not op}
52.5	2.27	1.60	"	Lg gr	70
56	1.80	0.84	Lg gr	bld	"
59	1.85	1.76	"	sm cob	60
64	1.72	2.72 / .63	bld	"	60
69	1.75	0.61	"	Lg gr	70
74	1.65	.36	Lg cob	bld	60
79	1.88	.19	bld	Lg gr	60
84	1.70	.73	Lg gr	bld	60
89	1.72	1.39	bld	Lg gr	60 ^{15° ang}
94.2	2.70	.99 / 0.50	"	Lg cob	60
99	3.10	.96 / .10	"	"	70 ^{25° ang}
102.5	1.8	.37	"	"	"
106	2.4	1.09	"	sm gr	80

Reach 1 B	TR-2	Continue	7/20/07	
STA	Depth	Vel	Dam	Sub % Cover
111	2.23	.68	sm gr	bld 60
116	2.40	.69	bld	sm cob 60
121	2.5	.64	"	"
126	2.6	.87 / .34	"	sm gr 80
131	1.45	.89	"	sm cob 80
136	1.50	.21	Lg cob	bld 60
141	0.97	.18	"	" 60
146				
RWE 145.0	0.0	0.0	bld	sm cob 80

7/20/07



Sultan R.
Reach 1B

10/21/07

	In	Out
Time	1:10	1:30
S.G	14 1/2	14 1/2

Crew: M. Gagner
G. Anderson

Equipment: Nikon Level

SW:

Reach 1B TR-1

10/20/07

WSE

STA	BS	HI	FS	Eleva	Road
-----	----	----	----	-------	------

BM	7.73	107.73		100.00	
	4.52	104.52			

HP-1			3.35	101.17	
------	--	--	------	--------	--

LWS (looking up/s)			8.24	96.28	
-----------------------	--	--	------	-------	--

104.52

8.24

96.28

104.52

3.35

101.17

107.73

3.35

104.38

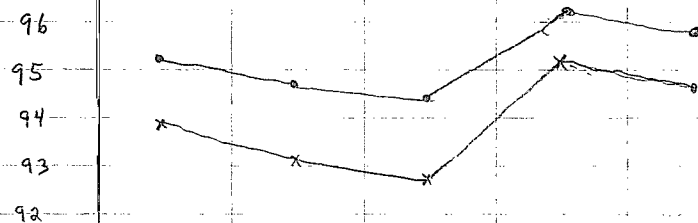
R1 B Sultan R. TR 2 10/21/07

	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>EL</u>	<u>D</u>
BM	4.93	104.93		100.00	
HP			6.06	98.87	
LWSE (Looking u/s)			9.64	95.29	

104.93
6.06
98.87

104.93
9.64
95.29

	WSE				
	7/18	7/19	7/20	10/21	12/19
TR-1°	95.21	94.82	94.54	96.28	95.93
TR-2 ^x	93.83	93.27	92.85	95.29	



R1 B Sultan R.

12/20/07

TR-1 (lower most)

STA	BS	HI	FS	Elev	Rod
-----	----	----	----	------	-----

BM 3.77

100.00

HP

103.77

2.60

101.17

LWS

7.84

95.93

0.0

MWS

9.55
(7.43)

96.34

2.12

Looking off

 $\bar{x} = 96.13$

9:05

9:10

R1 B

Sultan R.

12/20/07

TR-2 (upper most)

STA	BS	HI	FS	Elev	Rod
-----	----	----	----	------	-----

BM

4.45

100.00

HP

104.45

5.58

LWS

9.81

94.64

0.0

MWS

13.08
(9.78)

94.67

3.30

9:30

Sultan River
Instream Flow Study



"American River"
ALL-WEATHER
ENVIRONMENTAL
No. 550

Reach 1A

Jackson Project

1628.03

Location _____ Date _____

Project / Client _____

Reach	1	A
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July 18, 2007

Crew: A. Waybright
T. S. H. Van
M. Gagner

	In	Out
Time	11:20	7:30

Location _____ Date _____

Project / Client _____

4

Location Reach 1 A Date 7/18/07Project / Client Sns PoolTR-10 Riffle / head of Island Loop & WSE

STA	BS	HI	IS	Eleva	Reel
BM	1.62			100.00	
		101.62			
HP-1			2.33	99.29	
Rock			3.38	98.24	
(TP)					
Rock	3.45			98.24	
		101.69			
HP-1			2.40	99.29	
BM			1.69	100.00	
		101.69			
(RWS=)			5.59	96.10	
d/s ~ 50'			6.03	95.66	
					1.97 / 1.8%
u/s ~ 60'			4.06	97.63	
(LWS 173.0)			5.40	96.29	
47.0			5.16	96.53	
15.0			4.68	97.01	
HP-1	2.42	101.71		99.29	99.35
Paul's 1/2 moss nail		102.18		99.77	sc 3.6
base of tree			2.41		
sc 3 WSE			3.98		

5

Location Reach 1 A Date 7/18/07

Project / Client

TR-10 D & V

STA	Depth	Vel	Comments
RWP= 1.0			
LWE= 7.6	0.0	0.0	
8.8	0.10	~ 0.2	
10.5	out 0.40	0.40	tip bld
14.0	0.4	0.57	
18.0	0.3	0.34	
22.0	0.3	0.38	
26.0	0.25	1.68	75° angle
30.0	0.30	2.60	"
34.0	0.75	0.54	"
38.2	0.65	1.09	"
40.5	0.80	0.36	u/s 4d
43.0	0.90	0.97	25° angle
47.0	0.92	1.14	15° angle
49.5	0.63	0.83	
52.0	0.3	0.03	u/s vel break
53.5	out 0.6		
56.5	6.5	0.75	
60.0	1.0	1.26	70° angle
62.0	1.1	0.65	u/s bld
64.0	0.6	1.93	60° angle on bld
68.0	1.45	1.01	u/s bld 75° angle
72.0	1.27	2.21	

8

Location Reach 1ADate 7/18/07

Project / Client _____

TR-9 Pool Loop & WSE

STA	BS	HI	FS	Eleva	Rod
BM	1.06			100.00	
		101.06			
HP-1			4.34	96.72	
Rock			7.23	93.83	
Rock (TP)	7.18			93.83	
		101.01			
HP-1			4.29	96.72	
BM			1.00	100.01	
		101.01			
LWS			7.94	93.07	
RWS			7.92		
HP-1	2.49	99.20		96.72	
HP-2	1.40		1.40	97.80	Right bank

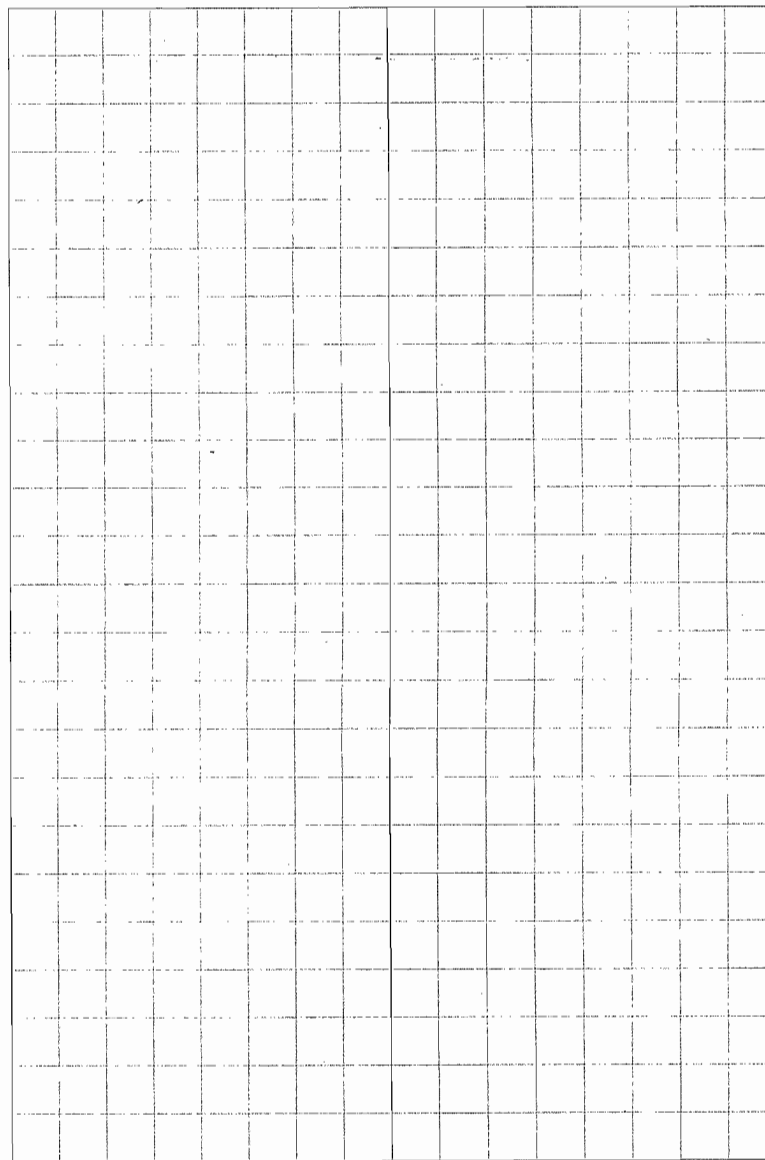
* use Q-measurement for TR-10 as
discharge for TR-9

9

Location _____

Date _____

Project / Client _____



Location Reach 1 A Date 7/18/07Project / Client Sun PodTR-7 Riffle Loop & WSE

STA	BS	HI	FS	Eleva	Recl
BM	0.86			100.00	
		100.86			
HP-1			0.25	100.61	
Rock			4.53	96.33	5.17 5.17 5.17
(TP)					
Rock	4.59			96.33	
		100.92			
HP.			0.31	100.61	
BM			0.92	100.00	
		100.92			
LWS (13)			4.53	96.39	
WWS (48.0)			4.53		
RWS (84.0)			4.57		
W/S ~ (55.0')			4.43		
W/S ~ (45.0')			4.89		

Location Reach 1 A Date 7/18/07Project / Client Sun PodTR-7 Riffle D & V

STA	Depth	Vel	Comment
LNE = 4.7	0.0	0.0	
LWP = 1.0			
10.0	.25	.37	
14.0	.40	.82	
18.0	.70	1.61	
22.0	.92	2.28	
26.0	1.35	1.64	
29.0	0.30	2.95	top b/d
30.7	1.35	2.09	edge b/d
35.0	1.78	2.00	
39.2	2.22	1.65	
43.0	2.12	1.52	3.68/.81
47.0	2.30	2.47	
51.0	2.6	3.47	
55.0	3.10	3.61	1.69
59.0	3.70	3.39	2.01
63.0	3.30	3.42	2.58
67.0	3.55	3.49	2.50
71.0	3.68	3.26	2.24
75.0	2.95	3.47	.54
78.5	2.32		2.63
83.0	1.30	2.85	
86.5	1.02	0.88	

12 Location Reach 1A Date 7/18/07

Project / Client Sun Pvd

TR-7 R: JGL D E V continue

STA	Depth	Vel	Comments
-----	-------	-----	----------

90.0	0.50	1.01
------	------	------

94.0	0.35	0.18
------	------	------

RWE 98.1 0.0 0.0

RWP = 112.0

13

Location _____ Date _____

Project / Client

12 14

Location Reach 1 ADate 7/18/07

Project / Client

TR-6 Glide/Kend Long & WSE

Sta	BS	HS	FS	Eleva	Rail
-----	----	----	----	-------	------

BM 2.18

102.18

100.00

HP

3.08

99.20

Rock

5.68

96.50

Rock 5.51

102.01

96.50

HP

2.92

99.09

BM

2.01

100.00

LWS (7.0)

6.89

95.12

RWS (131.0)

6.89

95.12

Location Reach 1 ADate 7/13/07

15

Project / Client

TR-6 D & V Glide/Ron

STA	Depth	Vel	Currents
LWE 4.6	0.0	0.0	
LWP=1.0			
10.0	1.62	.05	
16.0	2.75	0.38 / .15	
22.0	3.46	.49 / .25	
28.0	3.95	.71 / .31	
34.0	4.10	.85 / .45 / .14	
40.0	4.32	.91 / .98	
46.0	4.38	1.50 / 1.16	
52.0	4.20	1.56 / 1.07	
58.0	4.07	1.59 / 1.18	
64.0	4.02	1.58 / 1.12	
70.0	3.98	1.64 / 1.33	
76.0	4.15	1.67 / 1.29	
82.0	4.30	1.76 / 1.37	
88.0	4.25	1.50 / 1.24	
94.0	4.27	1.52 / 1.13	
100.0	4.27	1.81 / .59	
106.0	4.72	1.56 / .93	
112.0	4.45	1.63 / .27	
118.0	3.28	1.46 / .35	
124.0	3.20	1.49 / .19	

16

Location Reach 1A Date 7/13/07Project / Client Sno Pod

TR-6 D & V continue

STA	Depth	Vel	sums
130.0	3.02	.23 / .16	
138.0	2.10	~.05	

RUE = 138.3 0.0 0.0

RUP = 147.5

swallow 4099

prop 54

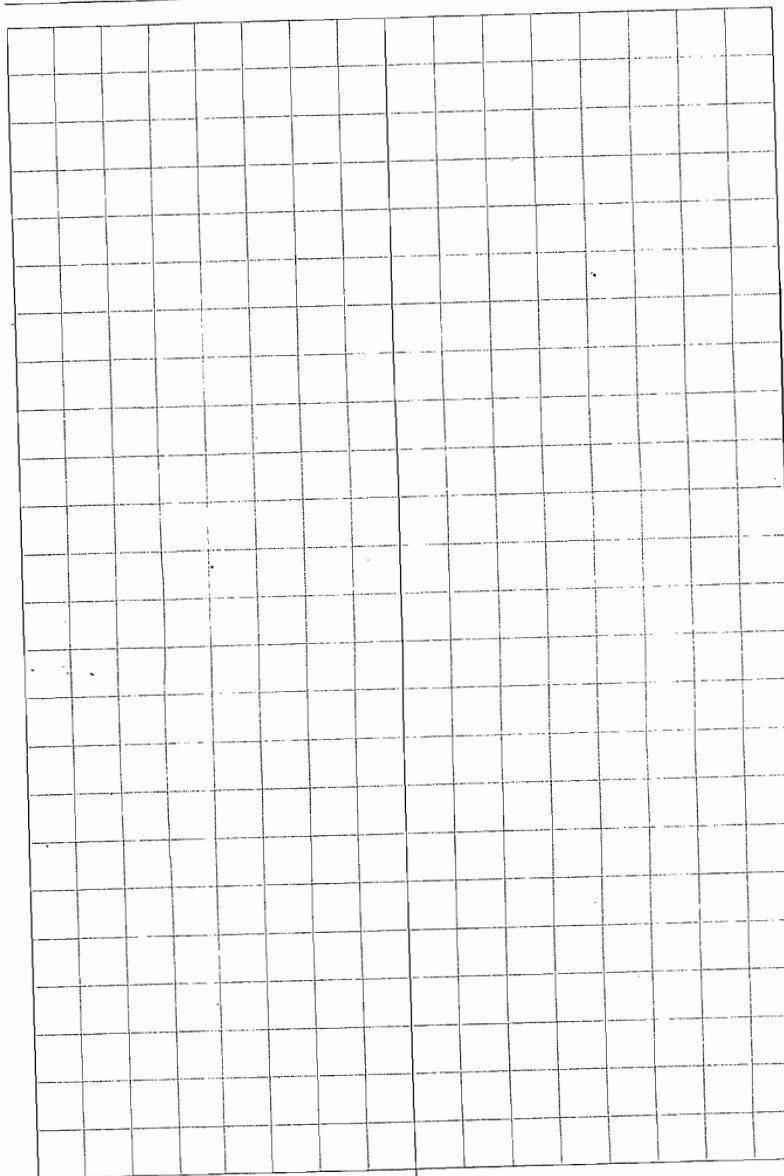
cal 0175

147.5

17

Location _____ Date _____

Project / Client _____



Location Reach 1 ADate 7/18/07

Project / Client

TR-5 head Rosie's Isle Loop E WSE

STA	BS	HI	FS	Elev	Ref
-----	----	----	----	------	-----

BM 1.66

100.00

101.66

HI

4.37

97.09

Rock

7.83

13.83

(77)

Rock 7.67

13.83

101.50

CP

4.41

97.09

BM

1.50

100.00

Left side

101.50

LWS (10.0)

6.07

MWS (37.0)

6.37

RWS (134.0)

5.81

Right side

LWS (170.0)

5.77

MWS (225.0)

5.92

RWS (255.0)

6.29

Location Reach 1 ADate 7/18/07

Project / Client

TR-5 DEV Top of Island (R. Hill)

STA	Depth	Vel	Comments
RWP-1.0			
RWE-7.6	0.0	0.6	
13.0	1.2	.93	15° angle
20.0	1.65	1.74	
27.0	1.50	2.47	
35.0	1.40	3.35	15° angle
40.0	1.90	3.35	
45.0	2.05	3.15	
50.0	2.00	2.69	
55.0	1.90	4.33	
60.0	1.60	4.55	
65.0	1.70	3.15	
70.0	1.4	3.31	
75.0	1.25	3.21	
80.0	0.85	2.18	
85.0	.65	3.21	
90.0	.75	.70	up side 70° angle
95.0	0.40	1.11	
100.00	.30	.53	25° angle
105.0	.40	1.47	
110.0	.60	.80	
115.0	.20	.29	
118.0	.30	.03	

Location Reach 1ADate 7/18/07

Project / Client

TR-5 Dig

STA	Depth	Vel	Comments
132.0	.25	2.05	70°
128	.20	0.20	vel sketch
132.0	.35	2.41	
135.0	.30	0.20	80° angle
137.5	0.20	1.72	
141.5	.30	.76	
144.0	out .50	—	
146.5	.30	.56	
151.0	.05	~.10	
LWE 156.5	0.0	0.0	right channel
MA moving pin		167.1	
RWE 179.1	0.0	0.0	
184.0	.10	~.03	
189.0	.20	1.03	45° angle
194.0	.15	0.60	
196.0	out .30	—	
198.0	0.38	~.10	
200.0	.40	1.25	
202.0	.65	.08	
205.0	.70	.63	
208.0	.60	1.04	
212.0	.55	.11	up vel beach
213.5	.60	2.58	

Location Reach 1ADate 7/18/07

Project / Client

TR-5 Top Rose's Island LWE Center

STA	BS	HI	FS	Elev
HP	3.37			97.09
268			5.82	trans. down
281			5.83	
291.0			5.81	
2/s 60'			8.04	Right side channel
2/s 70' up from V			4.34	"
			4.62	
BM	1.43			100.00
		101.43		

Location Reach 1ADate 7/18/07

Project / Client

TR-5 (Riffle) Top Rose's Id. Continue

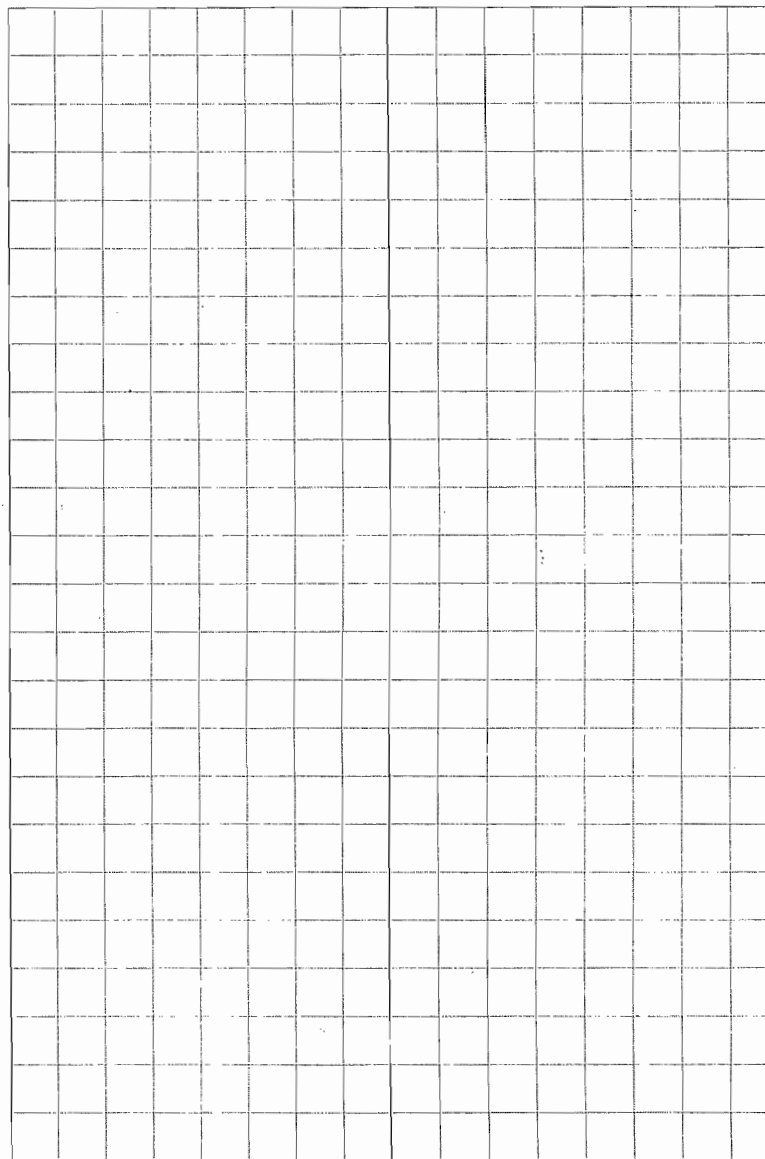
STA	Depth	Vel	Comments
217.0	0.40	0.56	
221.0	0.55	0.49	
226.0	0.65	0.83	
231.0	0.65	0.35 1.02	
236.0	0.50	3.07	
241.0	0.60	2.67	30° angle
247.0	0.60	2.84	{
252.0	.45	4.01	
257.0	.70	2.75	—
262.0	.30	1.46	transition
263.8	out .40	—	
266.0	.10	1.28	80° angle
270.0	.50	0.21	30° "
275.	.60	0.25	45° angle
280.	.35	1.16	"
285.0	1.03	1.54	"
289.0	1.40	.07	u/s vel. break
291.0	1.62	1.02	
295.2	0.50	1.37	
295.3	0.0	0.0	~ 0.4' u/s

297.3 = Far right WP

Location

Date

Project / Client



Location Reach 1 ADate 7/18/07

Project / Client

TR-4 Riffle (lower Rose's Isl.) Loop & WSE

STA	BS	HI	FS	Eleva	Reel
BM	4.20			100.00	Top Island
		104.20			
HP			4.65	99.55	Right channel Right bank
Rock			8.49	95.71	
Rock	8.39			95.71	
		104.10			
HP			4.55	99.55	
BM			4.10	100.00	
(hooking up)		104.10			
Right channel			8.74	95.36	96.31 95.30
LWS (176.0)			8.79	95.31	96.16
MWS (203.0)			8.74	95.16	96.25
RWS (228.0)			8.85	95.25	96.25
216.0					
u/s ~45'			8.61	95.49	96.33
d/s ~50'			9.50	96.96	96.33
Left channel			7.28		96.82
RWS (93.0)			4.29	95.17	96.82
MWS (57.0)			7.65	95.13	
LWS			7.62	95.16	
u/s ~60'			7.49	95.29	
d/s ~45'			8.00	94.78	

Location Reach 1 ADate 7/18/07

Project / Client

TR-4 Riffle D & V (lower Rose's Isl.)

STA	Depth	Vel	Comments
LWE 6.9	0.0	0.0	
10.0	.50	1.02	
14.0	.72	0.67	
17.0	.92	1.51	
21.0	1.0	2.22	
25.0	1.7	3.16	
29.0	2.0	3.31	
33.0	2.35	4.37	
38.0	2.30	5.25	u/s bid
42.0	2.0	3.09	
46.0	2.1	3.36	
50.0	2.4	3.12	
54.0	2.2	3.81	
58.0	2.27	3.00	
62.0	1.55	3.36	
66.0	2.05	2.91	
70.5	1.70	3.21	
74.0	1.68	2.36	
78.0	1.32	2.12	
82.0	1.35	2.25	
86.0	1.00	2.90	
90.0	0.88	2.55	
94.0	.55	1.25	

Location Reach 1A

Date 7/18/07

Project / Client

TR-4 (Lower Rose's Isl.) Continue

STA	Depth	Vel	Comments
96.5	0.40	.53	
99.8	0.0	0.0	RWE
	middle	WP=139.7	
172.8	0.0	0.0	LWE
174.0	0.52	0.75	
177.0	0.60	1.59	
180.0	0.62	1.93	
183.0	0.62	1.96	
186.0	0.88	2.04	
189.0	1.10	2.61	
192.0	1.15	2.88	
195.0	0.90	2.64	
198.0	1.10	1.73	
200.5	1.02	0.97	u/s bld
202.0	0.88	1.89	
205.0	0.90	0.10	u/s bld
208.0	0.78	1.25	
211.0	0.45	0.70	
214.0	0.30	1.31	
217.0	0.20	1.07	30° angle
220.0	0.38	0.51	"
223.0	0.60	~.20	
226.0	0.70	~.05	

Right channel

Location Reach 1A

Date 7/18/07

Project / Client

TR-4 (Lower Rose's Isl.) D & V Continue

STA	Depth	Vel	Comments
229.0	0.70	0.95	
232.0	0.80	1.02	
RWE 233.70	0.0	0.0	
RWP=239.8	0.0		
Swiffer: 4099			
pump: 5A			
cal: 0175			

Location Reach 1 ADate 7/18/07

Project / Client _____

TR-3 Run / Glide Loop & WSE

STA	BS	HI	FS	Eleva
BM	1.81			100.00
		101.81		
HP			2.57	99.24
WP			2.22	99.59
(TP)				
WP	2.10			99.59
		101.69		
HP			2.45	99.24
BM			1.69	100.00
		101.69		
LWS			5.92	95.77
RWS			5.91	95.78
W/S ~ 60'			5.90	95.79
d/s ~ 60'			5.94	95.75

Location _____

Date _____

Project / Client _____

Sultan R. Instream Flow
Reach 1A

July 19, 2007

Crew: M. Gagner
T. Sullivan
A. Weybright

	In	Out
Time	11:00	7:00

Location Reach 1 BDate 7/19/07

Project / Client

TR-10 Riffle Loop & WSE (Top Isl.)

STA	BS	HI	FS	Elev	
BM	1.37	101.37		100.00	Right bank point of Isl.
HP			2.03	99.34	
Rock			3.17	98.20	
(TP)					
Rock	3.23	101.43		98.20	
HP			2.09	99.34	
BM			1.43	100.00	
RWS (118.0)			<u>5.86</u> ^{RWS}	95.77	
v/s "50.0"			4.22	97.21	1.9% / 100
d/s "50.0"			6.20	95.23	
MWS (82.0)			<u>5.53</u> ^{MWS}	95.90	
61.0			<u>5.44</u>	LWS 95.99	
43.0			5.08		
^{LWS} 15.0			4.59		
34.0			5.10		
HP	3.35	102.69		99.34	✓
SC-3		side channel			
RWS			5.02	97.67	97.49
LWS			5.51	97.18	
MWS			5.01	97.44	
				97.68	

Location Reach 1 BDate 7/19/07

Project / Client

TR-10 Riffle D & V (Top Island)

STA	Depth	Vel	Comments
LWP 1.0			
LWP = 12.8	0.0	0.0	
14.0	0.0	0.0	
18.0	out 0.1		
22.0	out .10		
26.0	.05	0.44	80° angle
30.0	.10	1.60	"
34.0	0.30	.11	
38.2	.40	0.42	15° angle
40.5	.50	.84	
43.0	.65	.73	
47.0	.65	.88	
49.5	.40	.48	u/s bld
52.0	.15	.05	
53.5	out .05		
56.5	.25	.35	
60.0	.60	1.15	45° angle
62.0	.75	.53	25° angle
64.0	.30	1.05	30° "
68.0	1.05	0.90	" "
72.0	0.80	1.28	" "
* 15.3	0.2	.11	
* 36.0	.45	1.74	
* 65.2	.95	1.49	

Location Reach 1A

Date 7/15/07

Project / Client

TR-10 Rifle Cont:

STA	Depth	Vol	Comments
76	0.90	0.74	
77.5	out. 0.6	—	
79.5	1.15	0.69	
83.0	1.30	3.48	
87.0	1.85	3.31	
91.0	1.60	4.14	
95.0	1.90	5.69	
99.0	1.77	3.71	
102.5	2.10	4.81	
106.0	1.95	2.52	
110.0	0.8 1.40	3.09	
114.0	1.55	4.06	
116.0	1.1	2.34	
119.0	0.6	0.19	
121.3	0.0	0.0	

RWP = 134.6

* 80.5	1.20	1.91
--------	------	------

Location

Date _____

Project / Client

This image shows a full page of blank graph paper. The grid consists of small squares formed by thin black lines. A single vertical line runs down the center of the page, dividing it into two equal halves. There are no markings, text, or drawings on the paper.

Location Reach 1A Date 7/19/87

Project / Client

IR-9 Pool Loop & WSE

STA	BS	HI	FS	Eleva
B.M.	0.76			100.00
		100.76		
HP-1			4.04	96.72 96.72
Rock			6.94	93.82
Rock (TP)				
Rock	6.82			93.82
		100.64		
HP-1			3.92	96.72
			0.64	100.00
B.M.		100.64		
LWS (26.0)			7.88	
RWS (118.0)			7.90	92.74
W/S ~ 60'			7.92	
D/S ~ 60'			7.95	
				0.03 / 12" 0.25% slope
HP-2				
HP-1	2.38	99.10		96.72
HP-2			1.38	97.72

Location Reach 1A Date 7/19/87

Project / Client

TR-9 Pool Band Profile

STA	BS	HI	FS	Eleva	Sub
		100.64			
LWP=1.0			2.85		silt/veg 60
3.90			3.81		sm gr. veg 60
5.0			4.48		sm gr./mud gr 70
9.0			5.95		sand/mud gr 60
11.9			6.56		sand/sm gr 70
17.3			6.95		
21.2			7.52		
LWF=22.3			7.93		
RWE=116.4			7.91		bld/silt 60
117.4			6.54		
RWP=119.0			4.76		
+6.0'			3.48		
+10.0'			2.60		
Swollen: 4099 cal: 0175 prop: 5A					

Location Reach 1A

Date 7/19/07

Project / Client

TR-9 Pool Dev

STA	Dpth	Vel	Drum	Sub	%	Cover
LWB=22.3	0.0	0.0	sand	silt	80	sm. sand
24.0	0.70	.06	"	"	"	"
29.0	1.0	0.25	"	"	"	"
34.0	1.25	.32	"	"	"	"
39.0	1.58	.52	"	sm. gr.	80	"
44.0	1.77	.50	"	"	80	"
49.0	1.75	0.48	"	"	60	"
54.0	1.50	0.42	sm. gr.	sand	60	"
59.0	2.30	0.62	"	"	70	"
64.0	2.8	0.70 / .63	"	"	70	"
69.0	3.0	0.76 / .72	sm. gr.	med. gr.	70	"
74.0	3.72	0.88 / .76	mg. gr.	Lg. gr.	80	"
79.0	4.52	0.89 / .80	Lg. gr.	med. gr.	80	"
84.0	5.60	1.02 / .88	Lg. sand	Lg. sm. cob	60	"
89.0	7.0	0.95 / .84	Lg. cob	sm. cob	70	"
94.0	7.20	1.32 / .82	"	"	70	"
99.0	6.10	1.51 / .76	bld	Lg. cob	60	"
104.0	4.82	1.50 / .36	"	sm. cob	60	"
109.0	2.55	0.71	"	"	60	"
112.0	1.55	0.21	bed	Lg. cob	70	"
114.0	0.78	0.33	Lg. cob	sm. cob	60	"
RWB=116.4	0.0	0.0	"	Lg. gr.	80	"

Location

Date 7/19/07

Project / Client

TR-8 E7

See PDR Notes for
Field Notes TR-8

Location Reach 1A Date 7/19/07Project / Client Sno PodTR-6 Glide/Run Loop E WSE

STA	BS	HI	FS	Elev
BM	1.49			100.00

101.49

HP			2.39	99.10
----	--	--	------	-------

Roch			6.60	94.89
------	--	--	------	-------

(P)

Roch	6.78			94.89
------	------	--	--	-------

101.67

HP			2.57	99.10
----	--	--	------	-------

BM			1.67	100.00
----	--	--	------	--------

101.67

LWS (9.0)			6.87	94.80
-----------	--	--	------	-------

RWS (132.0)			6.88	94.79
-------------	--	--	------	-------

v/s ~45'			6.84	94.83
----------	--	--	------	-------

d/s ~35'			6.89	94.78
----------	--	--	------	-------

Location RA Reach 1A Date 7/19/07Project / Client Sno PodTR-6 D & V

STA	Depth	Vel	Comments
LWE = 5.8	6.0	0.0	
10	1.32	0.05	
16	2.30	0.05	
22	3.00	.32 / .01	
28	3.62	0.25 / .16	
34	3.90	.29 / .12	
40	4.05	.75 / .48	
46	4.02	.96 / .77	
52	3.85	1.12 / .78	
58	3.70	1.02 / .82	
64	3.70	.98 / .68	
70	3.65	1.11 / .71	
76	3.81	1.05 / .81	
82	3.90	1.13 / .77	
88	4.00	.95 / .73	
94	3.90	.94 / .79	
100	3.95	.69 / .40	
106	4.40	.55 / .26	
112	3.85	.37 / .19	
118	3.70	.27 / .23	
124	3.10	.10 / .11	
130	2.65		.03

Location Reach 1ADate 7/19/07

Project / Client

TR-6 Glide/Run

STA	Depth	Vel	Comments
134.0	1.98	~.01	

RWE 138.1 0.0 0.0

RWP = 147.5

Location Reach 1ADate 7/19/07

Project / Client

TR-6 Bank Profile

STA	BS	HI	ES	Eleva	Sub
		106.67			
LWP = 1.0			4.35		
+ 5.0			2.27		silt/veg
3.30			5.61		
4.90			6.56		
LWE = 5.8			6.87		
RWE = 137.9			6.98		
140.8			5.83		
143.7			5.08		
RWP = 146.0			4.65		
RWP = 147.5			4.55		
+ 5.0			4.33		
+ 10.0			3.82		

Location Reach 1 A

Date 7/19/07

Project / Client

TR-5 Riffle (Top Rose's Isl.)

STA	BS	HI	FS	Eleva
BM	0.76	100.76		100.00
HP-1			3.63	97.13
Rock			5.09	95.67
(TP)				
Rock	5.32	100.99		95.67
HP-1			3.86	97.13
BM			0.99	100.00
HP-2 new				
Left channel WSE		100.99		
15.0			5.88	95.11
74			6.16	
102			5.86	
142			5.22	
Right channel WSE				
202.0			5.46	
240.0			5.66	
263.0			6.10	
272.0			6.59	
Right channel WSE				
W/S ~ 50'			5.14	
W/S ~ 100'			5.11	
W/S ~ 50'			5.24	
W/S ~ 100'			6.57	

Location Reach 1 A

Date 7/19/07

Project / Client

TR-5 D & V (Rose's Isl. ^{Top})

STA	Depth	Vel	Comments
RWE = 9.6	0.0	RWP = 2.0 ⁰	(tape broke - shift 1.0')
13/14	.90	.59	15° angle
20/21	1.30	1.06	20° angle
27/28	1.10	2.38	10° angle
35/36	1.00	2.61	
40/41	1.55	2.29	
45/46	1.65	3.38	
50/51	1.65	2.27	
55/56	1.45	3.33	
60/61	1.25	4.38	
65/66	1.50	3.76	
70/71	1.10	2.94	
75/76	.85	3.30	
80/81	.40	2.04	10° angle
85/86	.30	2.52	20° angle
90/91	.52	.87	30° angle
95/96	.20	.10	20° angle
100/101	.20	1.84	15° angle
105/106	.20	.78	"
110/111	.40	.90	"
115/116	.03	—	
118/119	.15	.30	

Location Reach 1A Date 7/19/07Project / Client Sno PodBR-5 D & V continue

STA	Depth	Vel	Comments
122/123	.10	~ .60	
128/129	.03	~ .56	
132/133	0.20	.32	
135/136	0.0	—	
137.5/138.5	.10	~ .20	
141.5/142.5	out .20	—	
144/145	out .70	—	
146.5/147.5	D .10	0.0	
151/152			
RWE: 149.4			
m.d. WP = 168.1			
RWE = 188.7	0.0	0.0	Right Channel
184.0/185	out .10	—	
189/190		—	
194/195	out .55	—	
196/197	out .40	—	
198/199	.05	0.01	
200.0/201	.20	0.46	
202/203	0.45	.05	
205/206	.45	.88	
208/209	.15	1.09	
212/213	.40	.07	
213.5/214.5	.35	.72	u/s bld

Location Reach 1A Date 7/19/07Project / Client Sno PodTR-5 D & V continue

STA	Depth	Vel	Comments
217/218	0.40	0.20	
221/222	0.35	0.34	
226/227	.40	0.08	u/s bld
231/232	.50	.00	
236/237	.40	2.92	30° angle
241/242	.45	.96	
252/253	.25	2.93	
257/258	.45	1.35	
262/263	.15	2.02	30° angle
263.8/264.8	.15	1.80	80° angle
266/267	.02	.50	"
270/271	.20	.10	"
275/276	out .30	— .05	
280/281	0.15	.45	
285/286	.70	.47	45° angle
289/290	1.15	~ .05	
291/292	1.05	.31	
295.2/296.2	.25	0.01	
RWE 296.3	0.0	0.0	
*225	.50	1.28	
*231	.40	2.42	
*247.5	.40	2.69	

use this
data
MRG
03/05/08

Location _____

Date

7/19/07

Project / Client _____

TR-5

WSE

Side Channel

SC-2

survey tie

STA	BS	HI	FS	Elev
AP-1	3.39			97.13
		103.39		

Right Channel

279.0	6.12
292.0	6.13

2/s ~50'	8.42
----------	------

HP-2	2.20	100.19
------	------	--------

HP-2	2.27	101.19
		103.46

SC-2 BM ₁	4.23	101.23	rebar at
----------------------	------	--------	----------

SC-2 BM ₂	3.35	100.11	end of Log Rebar
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Location _____

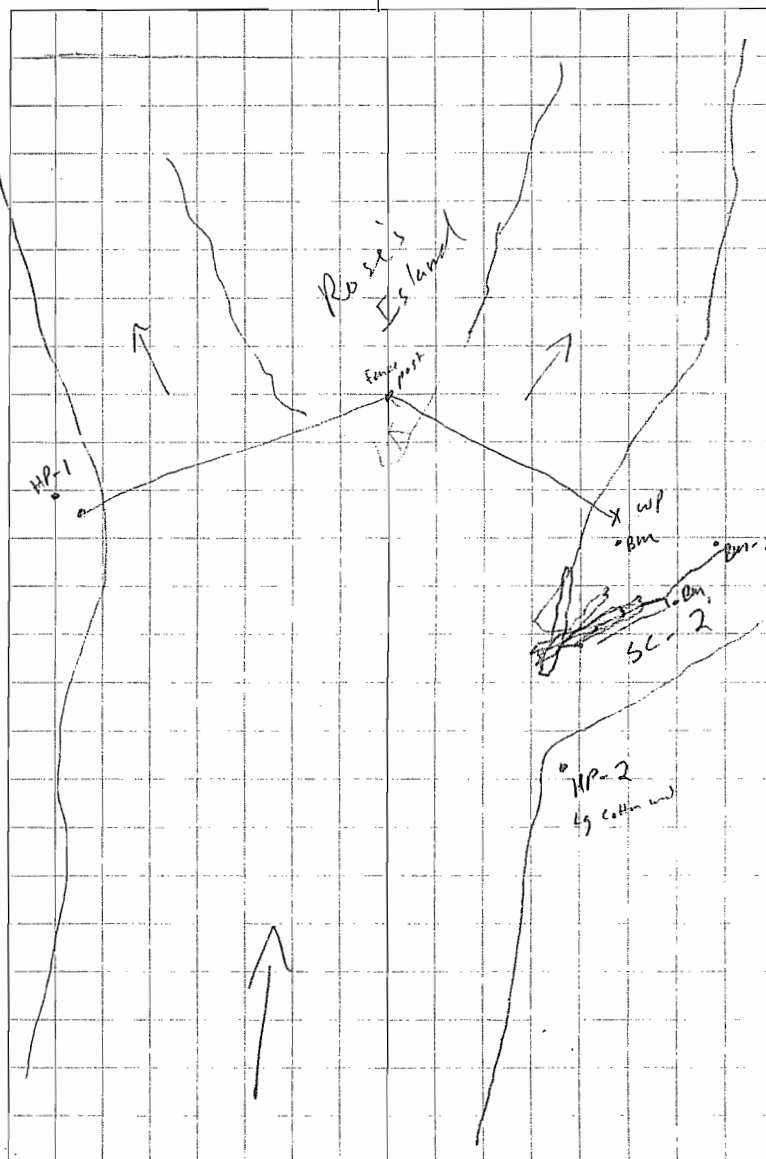
Date

7/19/07

Project / Client _____

TR-5

Site Map



Location Reach 1A

Date 7/19/07

Project / Client Sno Pod

TR-3 Run/Glide Loop, WSE, Bed Profile

STA	BS	HI	FS	Eleva	Substrate
Bm	1.18	101.18		100.00	
HP			1.94	99.24	99.24
Rock			5.45	95.73	
(P)					
Rock	5.27	101.00		95.73	
HP			1.77	99.23	
Bm			1.00	100.00	
LWS (45.0)			5.72	95.28	
LWP-2.0			2.47		veg/silt
7.0			3.35		
12.0			3.70		
17.0			3.78		
22.0			4.00		
27.0			4.16		
32.0			4.74		
37.0			5.18		silt/veg 60
LWE 38.8			5.60		sand/Lg cob 70
RWE (136.4)			5.70		bld/Lg cob 70
RWS (132.0)			5.71		
138.6			4.96		sm cob, md gr.
141.6			3.46		sand, Lg cob 60
144.6			2.24		"
147.3	RWP		0.69		veg/Lg cob

Location Reach 1A

Date 7/19/07

Project / Client Sno Pod

TR-3 D & V & Substrate

STA	Depth	Vel	Down	Sub	%
LWE = 38.8	0.0	0.0	Lg cob	Lg gr	60
44.0	0.25	0.83	Lg gr	Lg cob	70
48.0	.62	.18	"	"	60
52.0	.90	.35	"	mg gr	60
56.0	1.0	.38	"	sm gr	60
60.0	1.22	.48	sm gr	sand	60
64.0	1.50	.65	"	"	"
68.0	1.70	.72	"	"	"
72.0	1.90	.82	"	"	60
76.0	2.12	.83	"	"	60
80.0	2.30	.88	"	md gr	70
84.0	2.50	1.11	"	"	60
88.0	2.65	1.40	md gr	Lg gr	60
92.0	3.0	1.52	"	"	"
96.0	3.15	1.39	Lg gr	md gr	60
100.0	3.37	1.37	"	sm gr	70
104.0	3.70	1.70	"	md gr	70
108.0	4.22	1.79	sm cob	bld	60
112.0	4.40	2.21	bld	sm cob	"
116.0	4.07	1.84	"	"	"
120.0	3.72	1.43	Lg cob	sm cob	60
124.0	3.35	1.19	"	bld	70
128.0	2.0	0.63	sm cob	Lg gr	60

Location _____

Date 7/19/07

Project / Client _____

TP-3 Run/Glide D & V contour

STA	Depth	Vel	Dm	Sub	%
132.0	1.32	.30	Lg cob	Lg gr	70
RWE-136.4	0.0	0.0	"	sm cob	70

Location _____

Date _____

Project / Client _____

Sultan RiverInstream Flow StudyJuly 20, 2007

Crew: M. Gagner
A. Wegbright
T. Sullivan

Reach 1A

	In	Out
Time	11:00	6:30

Location Ranch 1ADate 7/20/07

Project / Client

TR-10 R/W of head of Isl. Loop E WSE & Profile

STA	BS	HI	FS	Elev	Subst.
BM	1.25			100.00	

101.25

HP

1.90

99.35

Rock

3.19

98.11

(2)

Rock 3.06

101.17

98.11

HP

1.82

99.35

BM

1.16

100.00

RWP 134.0

2.35

65.7

131.1

1.19

65.8

128.9

1.90

65.7

126.8

3.34

76.7

124.7

4.51

76.7

121.3

4.91

76.7

RWE 120.5

5.57

AWS 116.0

5.60

95.57

MWS 81.0

5.50

61.0

5.31

42.0

4.93

LWE 21.3

4.59

7.6

4.12

bid/veg. 70

Location

Date 7/20/07

Project / Client

TR-10

Continue

STA	BS	HI	FS	Elev	Subst.
5.5		101.17	3.96		bid/veg 70
3.6			3.15		1
LWP 1.0			2.97		veg/bid 70
+4			2.44		1
d/s ~ 50'			6.03	95.14	1.21
u/s ~ 50'			4.82	96.35	1.21%

Location Reach 1ADate 7/20/07

Project / Client

TR-10 Nav & Subst.

STA	Depth	Vel	Dirn	Sub	% com
LWR=1.0					
LWR=21.3	0.0	0.0	sm cab	Lg cab	60 —
14.0					
18.0					
22.0	out .40	—			
26.0	out .20				
30	0.05	.21			
34	0.20	.20			
38.0	0.45	0.98	sm cab	bld	"
38.0	0.25	.01			70
40.5	0.35	.10			70
43.0	0.40	.43		Lg cab	70
47.0	0.50	.93	Lg cab	sm cab	60
49.5	0.40	.09	bld	Lg cab	70
52.0	out .15	—		sm cab	"
53.5	out 1.0	—			80
56.5	.15	.43			80
60	.50	1.85		Lg cab	70
62	.65	.10	Lg cab	sm cab	60
64	.15	.80	sm cab	Lg cab	"
65.2	.67	.70	"	"	70
68.0	.80	.16	"	"	20
72.0	.65	.77			"

Location

Date 7/20/07

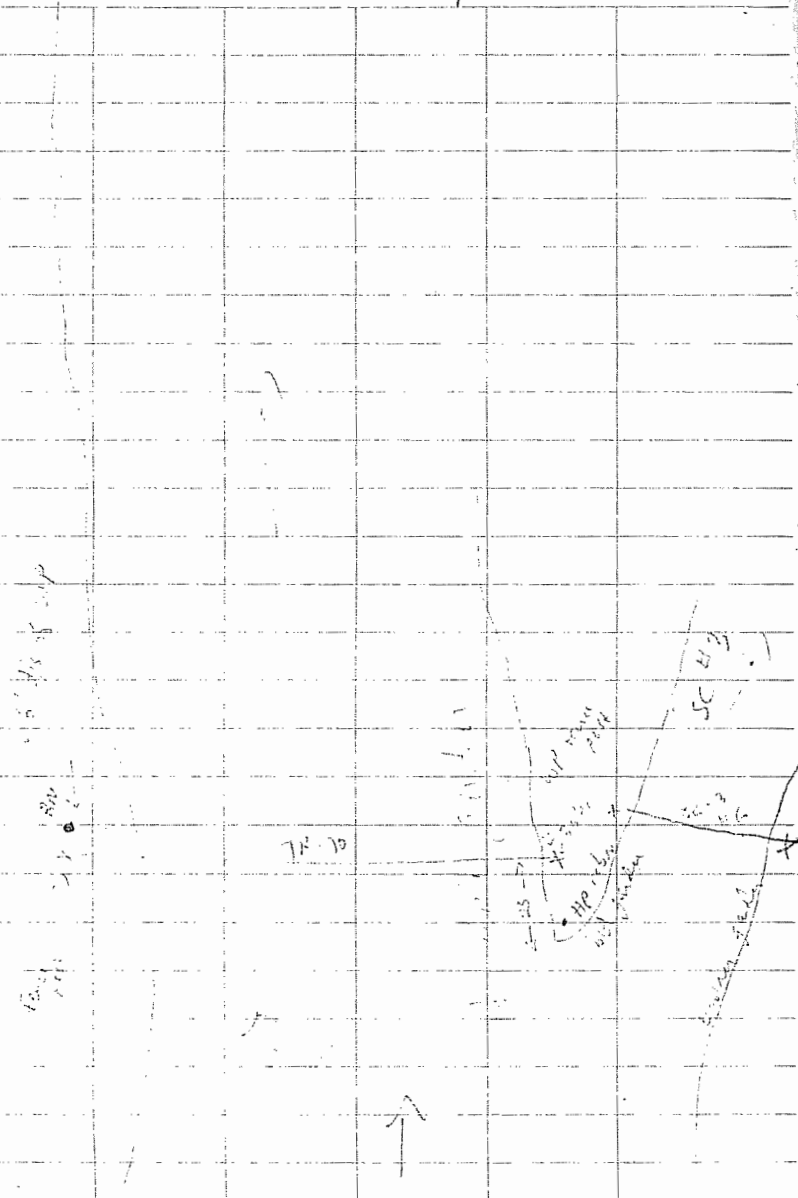
Project / Client

TR-10 contin

STA	Depth	Vel	Dirn	Sub	% com
76	.65	.99	bld	sm cab	60 —
77.5	out .90	—			
79.5	1.3	.58	"	Lg cab	"
83.0	1.10	2.77	Lg cab	sm cab	70
87.0	1.50	3.99	"	"	"
91.0	1.17	3.98	"	bld	70
95.0	1.35	3.78	bld	Lg cab	60
99.0	2.65	2.85	Lg cab	sm cab	60
102.5	1.90	4.28	"	bld	70
106	1.50	2.02	Lg cab	sm cab	70
110	1.80	2.79	"	"	70
114	1.30	2.96	"	"	70
116	0.88	1.13	sm cab	Lg cab	60
119.0	0.40	.11			"
RWR: 120.5	0.0	0.0	Lg cab	sm cab	60

Location Reach 1ADate 7/20/07

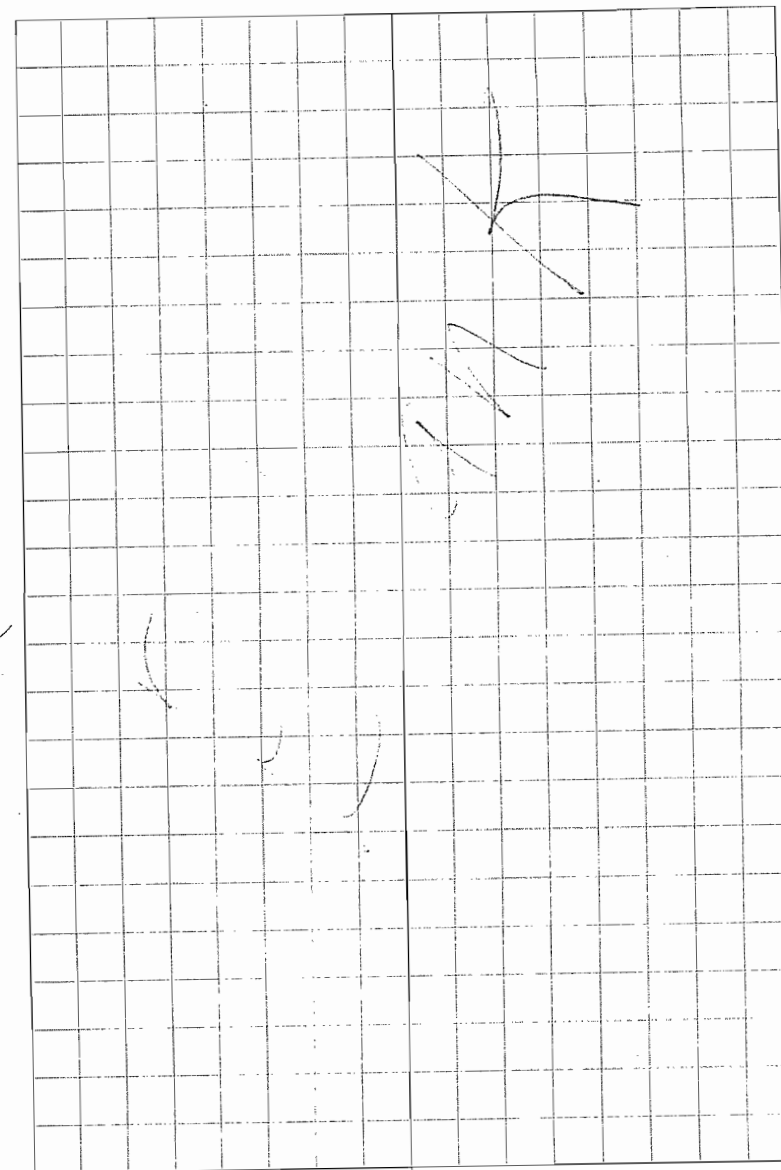
Project / Client _____

TR-10 Site Map

Location _____

Date _____

Project / Client _____



58

Location Reech / A

Date 7/20/67

Project / Client

TR-9 Level Loop \leq WSE

STA	BS	HI	FS	Elev
B.M.	0.22			100.00
		100.22		
HP-1			3.51	16.71
2nd			6.41	13.31
3rd	6.75	100.56		
HP-1			3.85	16.71
B.M.			0.57	11.71
HP-1	2.70			96.71
		99.41		
LWS			6.87	92.54
RWS			6.87	92.54
HP-2			1.75	

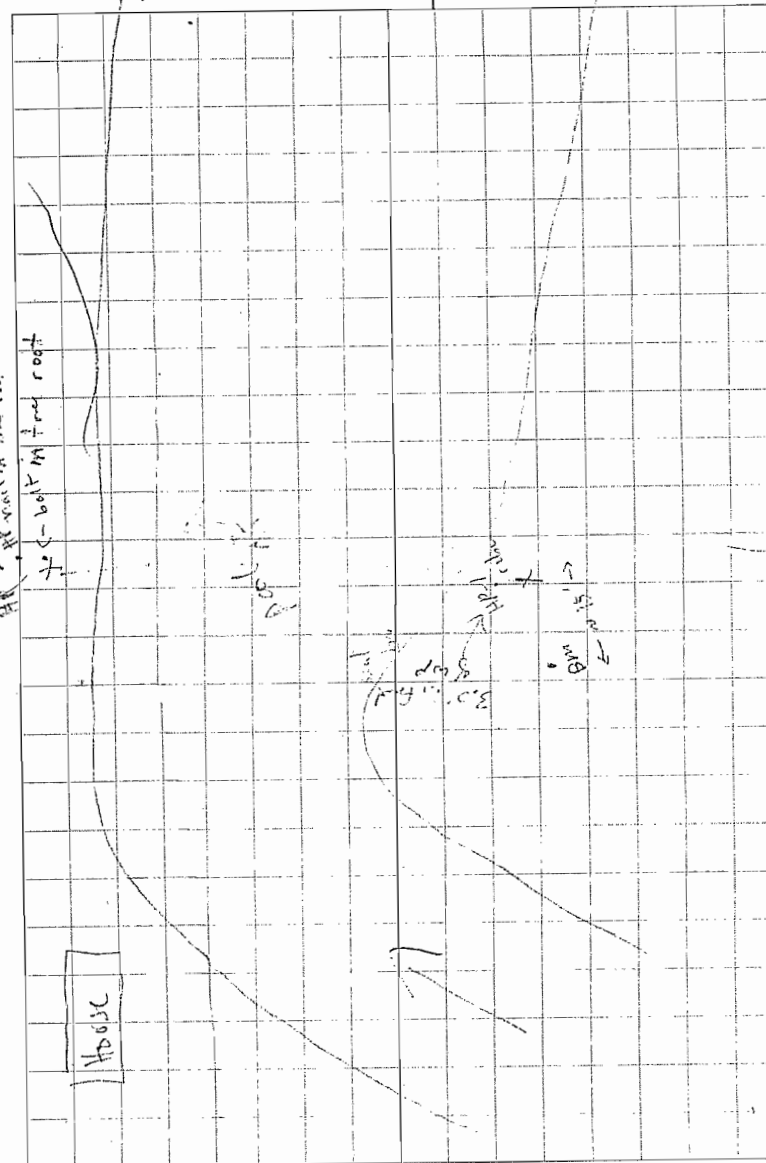
Location

Date 7/20/07

59

Project / Client

TR-9 Site Map



Location Reach 1 A

Date 7/20/07

Project / Client

TR-6 Stone Road Lamp & WSE

STA	Depth	Vel	Dom	Sub	%	Cover
102.12						

HP		3.02				
----	--	------	--	--	--	--

Rock		7.23	74.50			
------	--	------	-------	--	--	--

Stick 7.13	2.78		94.7			
------------	------	--	------	--	--	--

SP		2.92	17.7			
----	--	------	------	--	--	--

		2.91	15.7			
--	--	------	------	--	--	--

102.02						
--------	--	--	--	--	--	--

102.40		7.44	74.53			
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102.135						
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102.5		7.49				
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Location Reach 1 A

Date 7/20/07

Project / Client

TR-6 Guide DEV & Substrate

STA	Depth	Vel	Dom	Sub	%	Cover
LWE=6.7	0.0	0.0	sand	bl'd	80	-
10	1.10	.0	Lg cob	sm cob	70	-
16	2.10	.05	"	"	60	-
22	2.90	.13/.05	sm cob	Lg cob	70	-
28	3.40	.24/.15	bl'd	Lg cob	70	-
34	3.65	.20/.07	"	"	"	-
40	3.70	.44/.38	sm cob	bl'd	70	-
46	3.60	.63/.54	sm cob	sm cob	60	-
52	3.60	.67/.59	"	"	70	-
58	3.5	.65/.52	"	"	70	-
64	3.5	.62/.59	Lg gr	sm gr	60	-
70	3.5	.73/.66	sm gr	Lg gr	60	-
76	3.55	.74/.52	"	sm cob	60	-
82	3.68	.79/.73	"	"	70	-
88	3.70	.70/.53	"	"	"	-
94	3.70	.64/.61	"	"	"	-
100	3.70	.47/.39	sm gr	"	60	-
106	4.20	.36/.19	Lg cob	bl'd	60	-
112	3.75	.14/.03	bl'd	Lg cob	"	-
118	3.58	.18/.07	"	"	70	-
124	2.85	.05/.03	Lg cob	bl'd	"	-
130	2.42	.1/.03	"	sm cob	80	-
134	1.78	.01	"	"	60	-

RWE=102.70

62

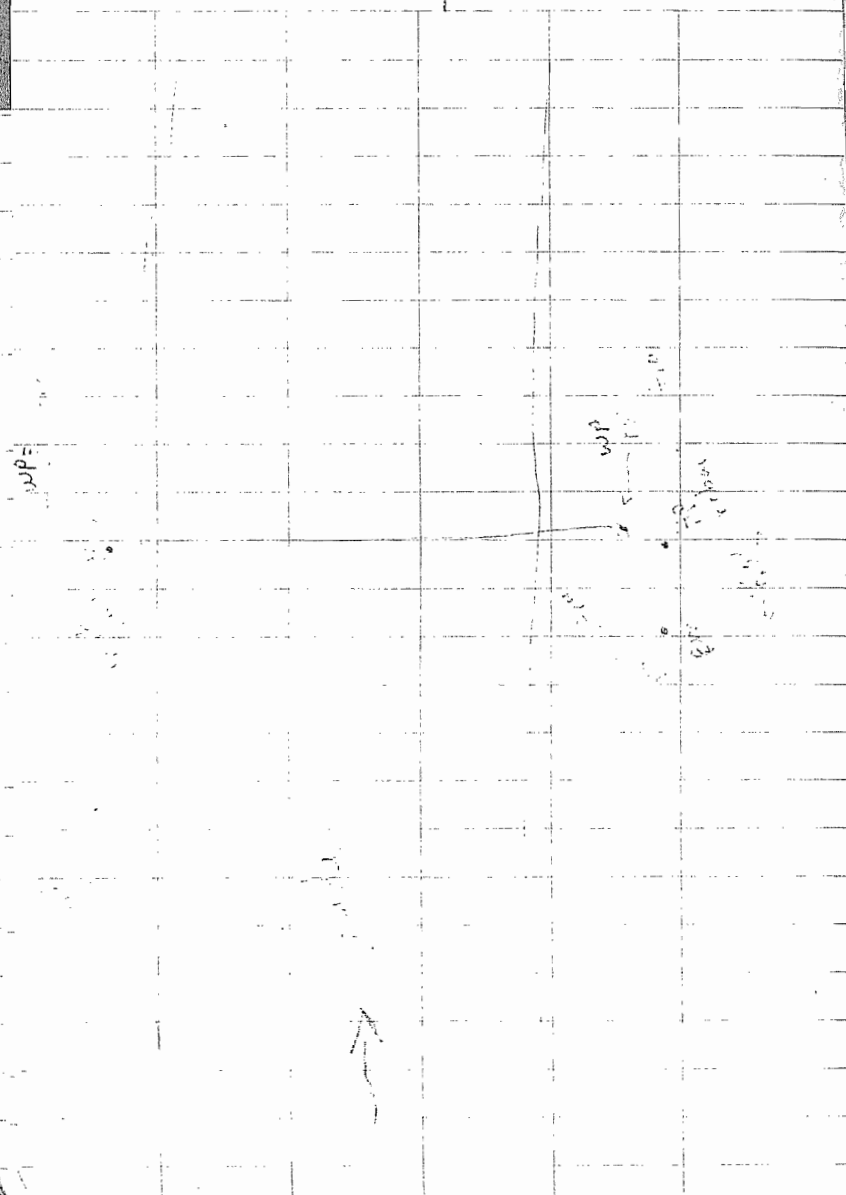
Location _____

Date

7/20/57

Project / Client _____

TR-6 Site Map

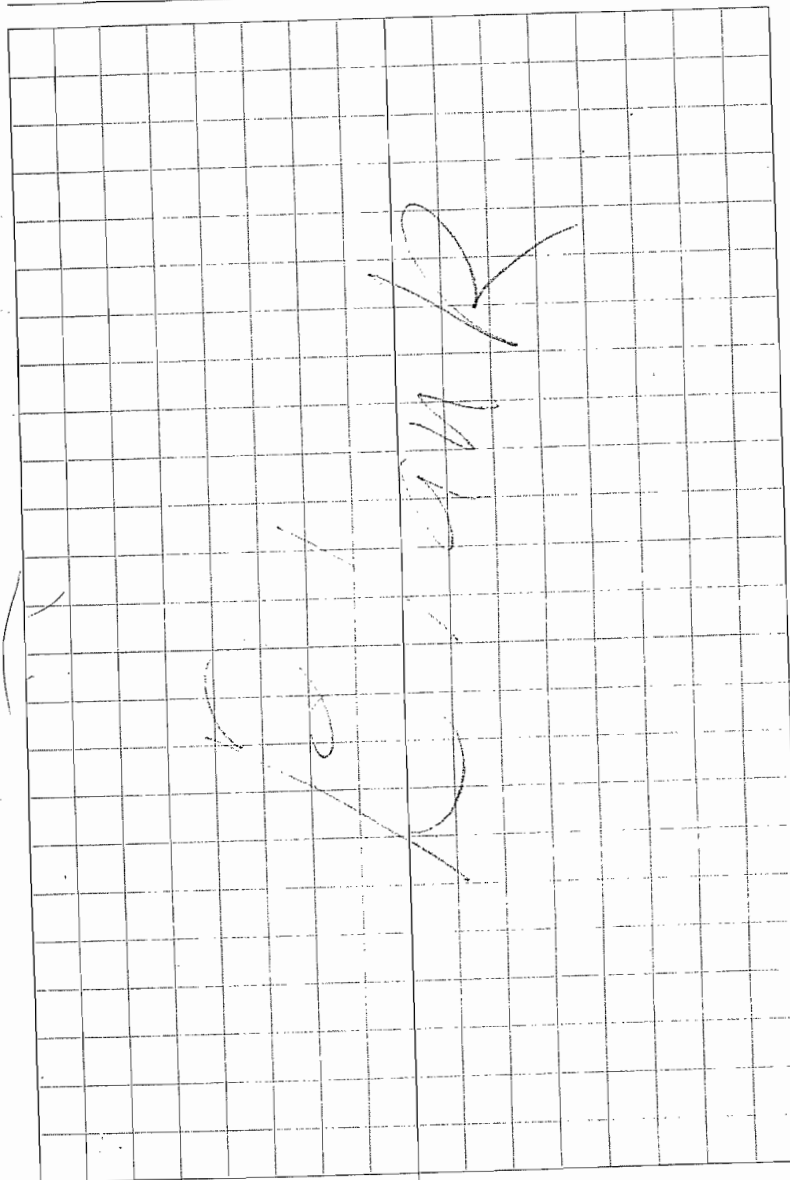


63

Location _____

Date _____

Project / Client _____



Location _____

Date 7/20/07

Project / Client _____

TR-5 (Top Rosie's Isl) Loop E WSE & Back Prof. 2

STA	BS	HI	FS	Eleva	Subst.
BM	1.22			130.00	
		101.22			
HP-1		4.07		97.15	
Rock		7.04		94.18	
Rock	7.16			94.18	
		101.34			
HP-1		4.19		97.15	
BM		1.33		100.01	
		101.34			
LWS = 1.0		0.90			
2.60		1.36			
5.0		4.71			
7.7		5.83			
LWE = 7.8		6.41			
LWS (15.0)		6.44		94.90	
mws (5.1)		6.50			
WSE 99		6.30			
126		5.79			
132		5.66			
135		5.69			
137.5		5.75			

Location _____

Date 7/20/07

Project / Client _____

TR-5

continue

STA	BS	HI	FS	Eleva	Subst.
141.5			5.70		Lg cob 60
144.0			4.89		" 80
146.5			5.62		" 80
151.0			5.92		" 70
156.5			5.38		m 4' Lg gr 60
RWE = 121.7					
159.9/160.4			5.69		sand Lg cob 60
163.6			4.79		sm gr sand 60
167.4 WP			4.56		" 60
170.5			5.20		Lg cob sand 70
175.0			4.89		" 70
177.8			5.28		" "
182.0			5.67		Lg gr Lg cob 70
184.0			5.51		" 60
188.7			5.68		" 60
194			5.76		" 5
196			5.38		
LWE = 197.4			5.86		
198 HP-1	3.62	100.77		97.15	
200 LWS (205)		5.30			
202 232		5.45			
205 258		5.82			
208 264		6.06			

WSE
right channel

Location _____

Date 7/20/07

Project / Client _____

TR-5 DEVE Substate

STA	Depth	Vel	Down	Sub	% cover
LWE 19.3	0.0	0.0	Lg cob	sm cob	0.0
19	.78	.49	"	Lg gr	80
20	1.10	1.06	sm cob	Lg cob	60
21	2.90	1.61	"	bld	60
22	0.8	2.71	"	Lg cob	80
23	1.25	3.04	Lg cob	sm cob	60
24	1.45	3.49	"	"	70
25	1.40	2.09	"	"	60
26	1.40	3.18	sm cob	Lg cob	60
27	1.5	2.75	"	"	70
28	1.05	4.16	"	"	60
29	.90	2.22	"	"	60
30	.65	2.68	"	"	70
31	.45	2.28	"	"	80
35.46	.10	1.07	Lg cob	sm cob	60
40	.30	1.09	sm cob	Lg cob	60
45	.1	—	"	"	60
100	.1	—	"	"	60
105	.15	—	Lg cob	Lg gr	60
112	0.23	2.18	"	"	60
112	0.02	—	"	"	—
118	.15	—	"	"	—
122.116	.15	.39	"	"	—
121.7	0.0	0.0	Lg gr	Lg cob	—

Location _____

Date 7/20/07

Project / Client _____

TR-5 DEVE continue

STA	Depth	Vel	Down	Sub	% F
128					
132					
135					
137.5					
141.5					
144					
RWE 146					
LWE 147.4					
198	0.15	—	Lg cob	sm cob	50
200	0.10	~.10	"	Lg gr	60
202	.40	.14	"	"	60
205	.30	.66	sm cob	"	60
208	0.0	—	"	"	"
212	.25	.22	"	"	60
213.5	.25	.31	"	"	"
217	.12	~.05	"	"	"
221	.20	.52	"	"	80
226	.28	.10	"	Lg cob	60
231	.30	.39	Lg cob	sm cob	80
236	.30	2.47	"	"	80
241	.30	0.83	"	Lg gr	"
250	.10	2.26	"	"	"
247.5	.10	.60	"	"	"

Location _____

Date 7/20/07

Project / Client _____

TR-5W. V. C. G. b.

STA	Depth	Vel	Desc	Sub	%
257	.30	.24	sm cob	lg cob	80
262	.05	.80	"	"	70
263.8	out .60	—	lg gr	lg cob	"
266.0	out .05	—	"	"	"
270	.10	.10	lg cob	lg gr	70
275	.10	.6.0	"	sm cob	60
280	.05	0.0	"	"	"
285	.30	.05	sm cob	lg cob	80
289	.98	.05	"	"	80
291	1.1	.05	"	"	"
295.2	0.0		"	"	"
RWE					

* 92.5 0.25 .71
 * 112.5 .40 1.75 sm cob lg gr 60
 * 120 .10 0.05

Location _____

Date 7/20/07

Project / Client _____

TR-5Bed Profile & WSE Contour

STA	BS	HI	FS	elev	Sol
	100.77				
270		6.50			
281		6.52			
291		6.54			
295.2		6.55		RWE	
296.1		4.47			
297.4		4.50		RWP	
+					

Location Reach 1 A

Date 7/20/07

Project / Client

TR-3 Run/Glide Loop E WSE

STA	BS	HI	FS	Elev
BM	1.01			100.00
		101.01		
HP			1.72	99.29
			5.52	95.49
Inch	5.64			95.49
		101.13		
HP			1.89	99.24
BM			1.13	100.00
		101.13		
LWS (42.0)			5.98	95.15
2WS (132.0)			6.11	95.02
MWS (94.0)			6.04	95.09 * use as best
HP			1.89	

Location Reach 1 A

Date 7/20/07

Project / Client

TR-3 P & V

STA	Depth	Vel	Comment
LWS 41.9	0.0	0.0	
44	0.0	—	
48	.38	.05	
52	.65	.18	
56	.78	.28	
60	.98	.37	
64	1.25	.48	
68	1.42	.51	
72	1.65	.63	
76	1.9	.65	
80	2.08	.66	
84	2.22	.76	
88	2.45	1.01	
92	2.65	1.17 .69	
96	2.90	1.21 .88	
100	3.12	1.20 .99	
104	3.45	1.34 1.12	
108	3.82	1.34 1.10	
112	4.20	1.53 1.21	
116	3.80	1.14 .75	
120	3.50	1.03 .47	
124	3.48	.70 .52	
128	1.75	0.39	

72

Location

Date 7/20/07

Project / Client

9P. 2 9.1 MA

Location

Date _____

7/20/07

73

Project / Client

 $D \in V$ continue

STA	Dgoth	Vcl	Commit
132	0.68	~.05	
RWE = 135.4	0.0	0.0	

Location R1 ADate 10/21/07

Project / Client

MainstemWSE

	In	Out
T.m.	3:00	
S.G.	14.7/8	

Crew:

Equip:

Location

R1 ADate 10/21/07⁷⁵

Project / Client

TR-10

STA	BS	HI	FS	Elev
BM	2.26			100.06
		102.26		
HP			2.97	99.35
Tip of Island				99.27
LWS			4.65	97.66
Mainstem (looking up)				
SC #3- TR-6			3.94	98.32
RWS				
Manhole RWS			5.03	97.23
(looking up)				
				(96.10)

Location _____

Date 10/21/07

Project / Client _____

TR-9 Pool

STA	BS	HI	FS	Elev
-----	----	----	----	------

BM 0.60

100.00

100.60

HP

4.88

95.72

LWS

6.54

94.06

RWS

6.53

R

Location _____

Date 10/21/07

Project / Client _____

TR-8

Riffle by road

STA	BS	HI	FS	Elev
-----	----	----	----	------

BM-1

4.68

100.00

104.68

BM-2

4.70

99.98

~~BM-2~~
WP~~4.02~~LWS
(looking N/S)

6.87

RWS

6.84

(Road) right bank
nail

1.86

102.82

Location _____

Date 10/21/07

Project / Client _____

TR-7 Riff (u/i of SC¹⁴ 3 aug 11.)

STA	BS	HI	FS	Eleva
HP	1.94			
RWS			4.98	
LWS			4.95	

Location _____

Date 10/21/07

Project / Client _____

TR-6 Run / Slide

STA	BS	HI	FS	Eleva
BM	1.95			100.55
HP		101.95	2.86	
LWS			5.93	96.02
RWS			5.95	

Location

Date _____

10/21/07

Project / Client

TR-5 Roses Island 4:55-5:15

STA	BS	AI	FS	Elev
-----	----	----	----	------

HP continued 2.90

Side channel
WSE
HDMI

Left
Right

4.88

4.84

4.86

TP

HI BM-1 8.19

5-5

BIM

42

4/63

Left hand
LWS

8.12

KWS

8.23

R. 9 let
Chesnut

LWS

8.30

MWS

9.10

RWS

9.45

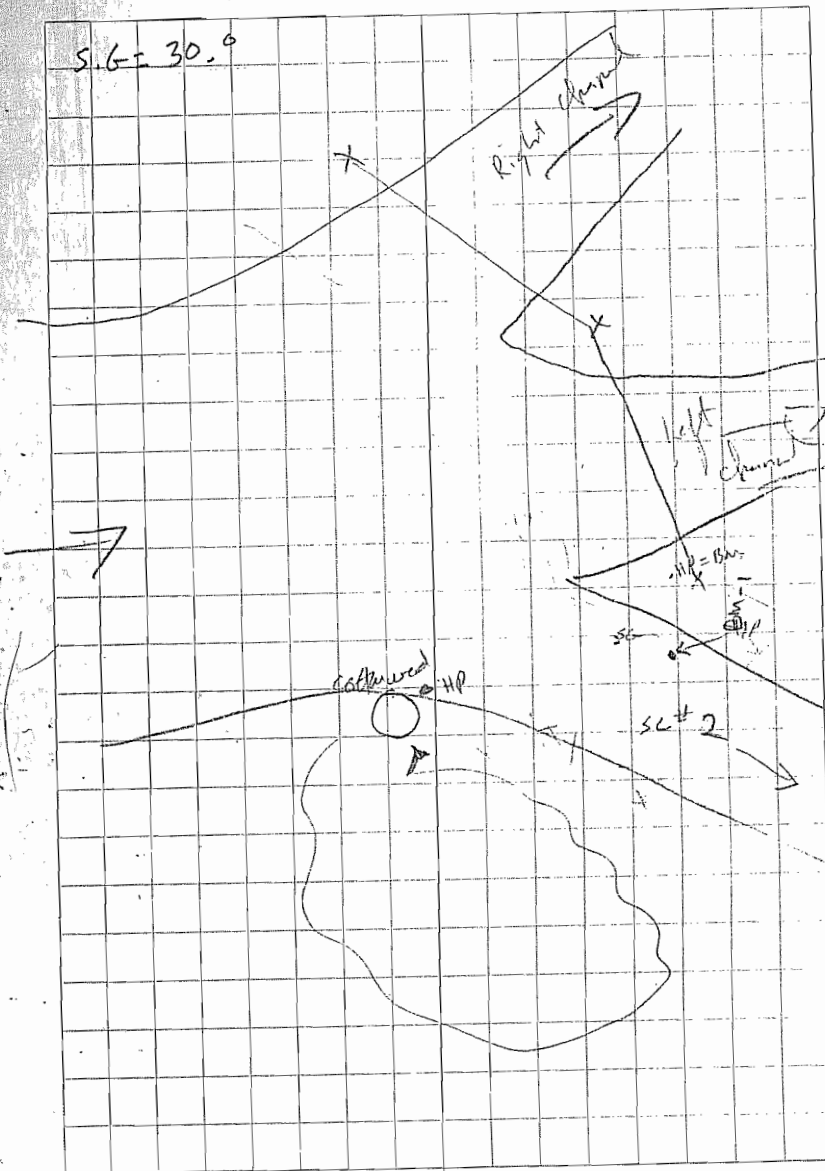
Location

Date _____

10/21/07

Project / Client

TR-~~1~~

$$S.G = 30.0$$


Location _____

Date 10/21/07

Project / Client _____

TR-4 bottom Roses

STA	BS	HI	FS	Elev
BM				
HP				
RWS			6.96	
LWS				

BM
HP

RWS

6.96

* BM - removed
 m. 211 w/ by p. removed
 HP - removed

* No data collected *

Location _____

Date 10/21/07

Project / Client _____

TR-3

STA	BS	HI	FS	Elev
BM	1.78			
HP			2.55	
RWS			4.27	
LWS			4.38	

BM

1.78

HP

2.55

RWS

4.27

LWS

4.38

Location _____

Date

10/21/07

Project / Client _____

TR-2

STA	BS	HI	FS	Elev
HP	3.47			103.47

inches

LWS

7.63 95.84

RWS

7.43 96.09

side view

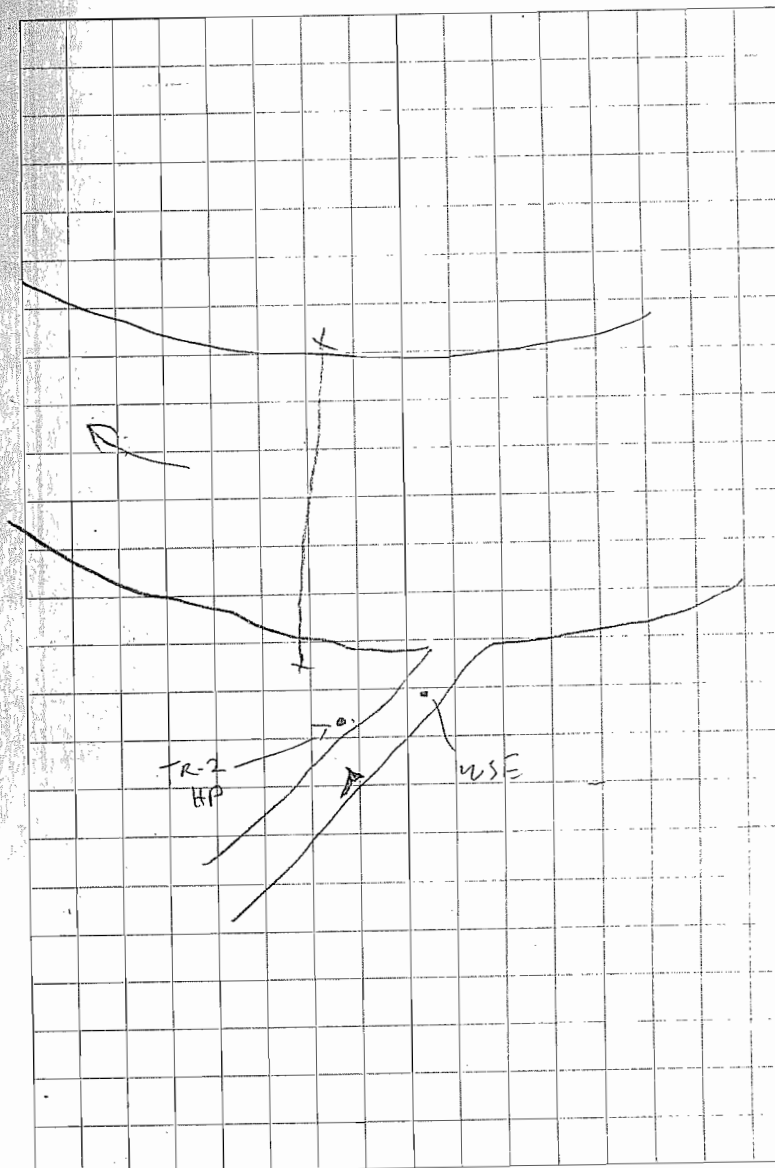
WSE

7.49 95.98

Location _____

Date _____

Project / Client _____



§. 38

[illegible]

Location RIADate 12/20/07

Project / Client

11:00TR-10

STA	BS	HI	FS	Eleva	Rod
Island HP-1					
Rebar	3.25			99.29	
main channel		102.54			
LWS			5.08	97.46	0.0
MLWS			6.73	97.16	1.35
side channel					
RWS			5.60	98.10	1.16
				(98.14)	
MWS			5.68	98.18	1.32
sc-3					
TR-6					
u/s nail	2.02				
d/s nail			2.26		
Island HP-1			2.27		
Rebar					
looky o/s					

Location RIA TR-9 PoolDate 12/20/07

Project / Client

11:30

STA	BS	HI	FS	Eleva	Rod
BM	3.07			100.00	
		103.07			
HP			6.35		
LWS			9.39	93.68	0.0
MLWS			13.13	93.75	3.61

90

Location RIA TR-8 Date 12/20/07Project / Client 11.72

STA	BS	HI	FS	Elev	Red
nail	BM-2 4.92			99.98	
		104.90			
1/8 rebar			4.24		
1/8 rebar BM-L			4.90	100.00	
LWS			7.33		0.0
MWS			9.40		2.08

9.40
10.00
2.00

91

Location RIA TR-87 Date 12/20/07

Project / Client _____

STA	BS	HI	FS	Elev	Red
BM	2.22				
HP			1.62		
WP			2.33		
LWS			4.99		0.0
MWS			7.95		3.07

Location RIA TR-6 Date 12/20/07Project / Client 12:20

STA	BS	HI	FS	Eleva	Red
BMI	2.07				
HP			2.98		
LWS			7.97	1.63	
MLWS			10.37	4.03	

10.37
4.23
6.14

2.97
1.63
4.34

10.37
4.23
6.14

Location RIA TR-5 Tip Ron's Is. Date 12/20/07Project / Client 12:30

STA	BS	HI	FS	Eleva	Red
HP-2	2.90				
side channel TR-6 SC-2 1/5 HP			4.86		
1/5 HP			3.96		
RWS			5.20	0.0	
LWS			5.98	0.79	
side channel SC-2 1/5 HP			7.19		
TR-5 HP			3.65		
main channel LWS			7.76	0.0	
RWS		near mid pt ss.	7.59	0.0	
MWS			9.19	1.45	
Right side channel SC-6					
LWS			7.79	0.0	
MWS			9.11	0.96	
RWS			10.24	1.30	
Looking up					

94

Location R1 A TR-3 Date 12/20/67Project / Client 1:35

STA	BS	HI	FS	Eleva	Rod
-----	----	----	----	-------	-----

BM 2.24

102.24

100.00

HP rebar

3.01

w/p nail

2.65

LWS

6.33

0.64

MWS

8.90

3.32

1 looking up

95

Location R1 A TR-2Date 12/21/67Project / Client + SC-1 1:55

STA	BS	HI	FS	Eleva	Rod
-----	----	----	----	-------	-----

SC-1 TR-6
nail

4.41

TR-HP

3.50

100.00

103.50

SC-1 TR-6

WSE

9.07

0.97

TR-2

RWS

10.15

1.99

MRWS

11.56

3.48

Location RIA TR-1Date 12/20/07

Project / Client _____

2:15

STA	BS	HI	FS	Eleva	Road
-----	----	----	----	-------	------

BM	3.84				
----	------	--	--	--	--

HP			3.85		
----	--	--	------	--	--

RWS			11.40		2.47
-----	--	--	-------	--	------

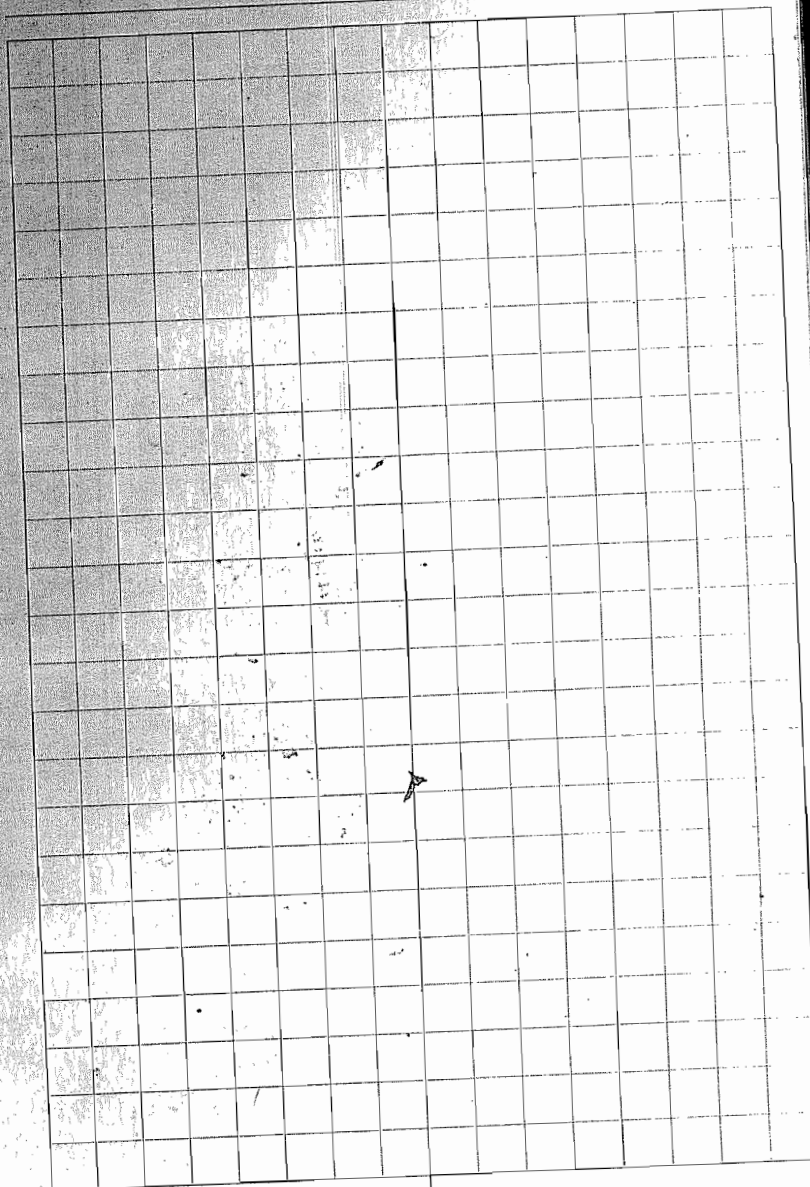
MWS			11.44		2.56
-----	--	--	-------	--	------

looking o/s

Location _____

Date _____

Project / Client _____



Sultan River
Instream Flow Study



"Put in the Ham"
ALL-FATHER
Environmental
FIELD BOOK
No. 550

Side Channel 2 & 3

Take on Project

1623.04

Address _____

Phone _____

Project 100%

Specifications for this book:

Page Pattern		Cover Options	
Left Page	Right Page	Polydura Cover	Fabrikoid Cover
Columnar	1/4" Grid	Item No. 550	Item No. 550F

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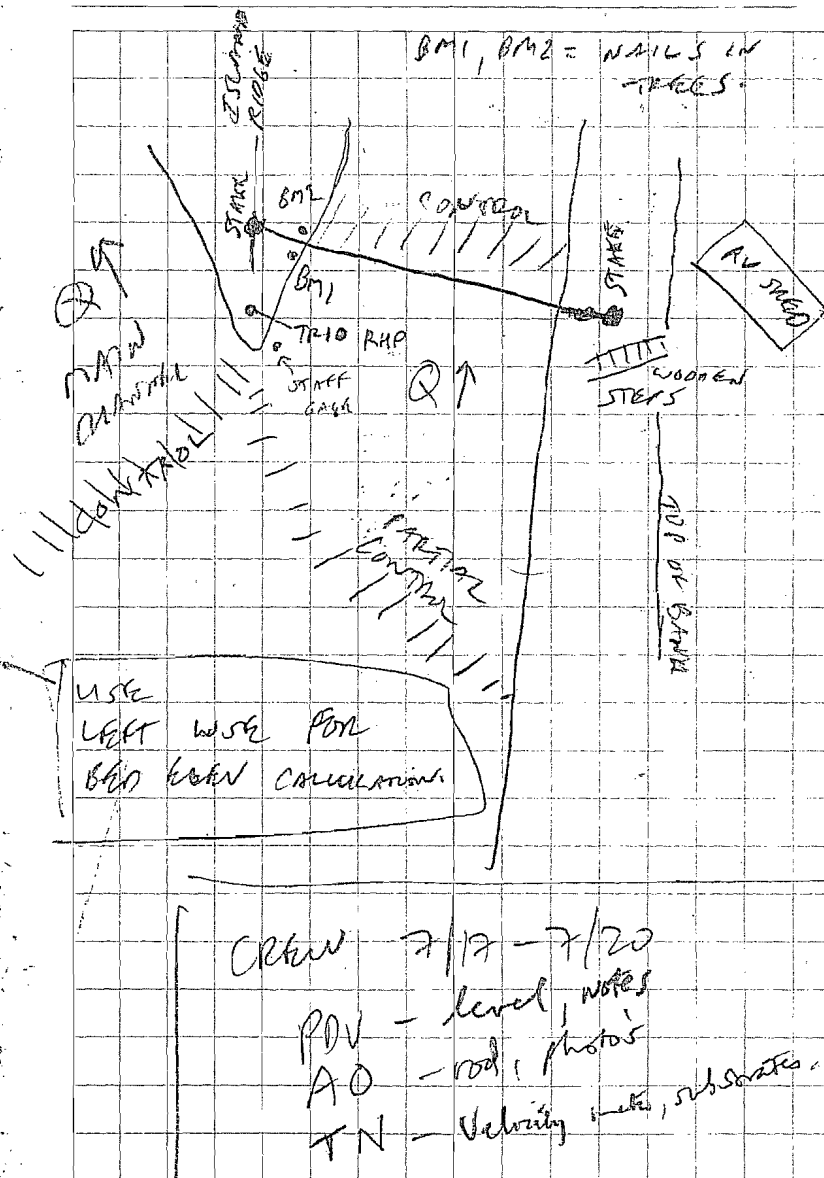
[illegible]

147 Error codes, Hazardous classifications, Container types
148 Sampling guidelines (Liquids)
149 Sampling guidelines (Solids)
150 Approximate Volume of Water in Casing or Hole, Ground Water Monitoring Well
151 PVC Pipe casing tables
152 Soil Classification
153 Soil Classification
154 Conversions (Length, Weight, Volume, Temp, etc...)
155 Conversions (Concentrations, Volume/Flow or Time, Velocity, Acceleration)
156 Maximum Concentration of Contaminants for the Toxicity Characteristic

Location SULTAN R. REACH 1A Date 7/17/07Project / Client SC3-6 / CONTROL / RIFFLESTAFF GAGE - 60 ft x 15 = 5.25 ft in @ 11.1 ft

STA	BS	HI	FS	ELEV	INB	1.13m
BMI	2.79'	102.79		100.00		
Bm2	STA		3.02	99.77		
LWP STAKE	119.7		3.01	VEG	100	
	114		3.26			
	109		3.17			
	105		3.03			
	100		3.73			
	95		3.97			
	93.2		4.15	↓	↓	
	91.9		4.31	VEG	100	
WSE/WE	91.4		4.73			
WSE/WE	15.2		4.95			
	13.0		4.30	VEG	100	
	11.0		4.05			
	9.0		3.42			
	7.0		3.23			
	5.0		2.79	↓	↓	
RWP STAKE	2.0		1.32	VEG	100	
Bm1			2.79	✓		

Location _____ Date _____

Project / Client SC3-6

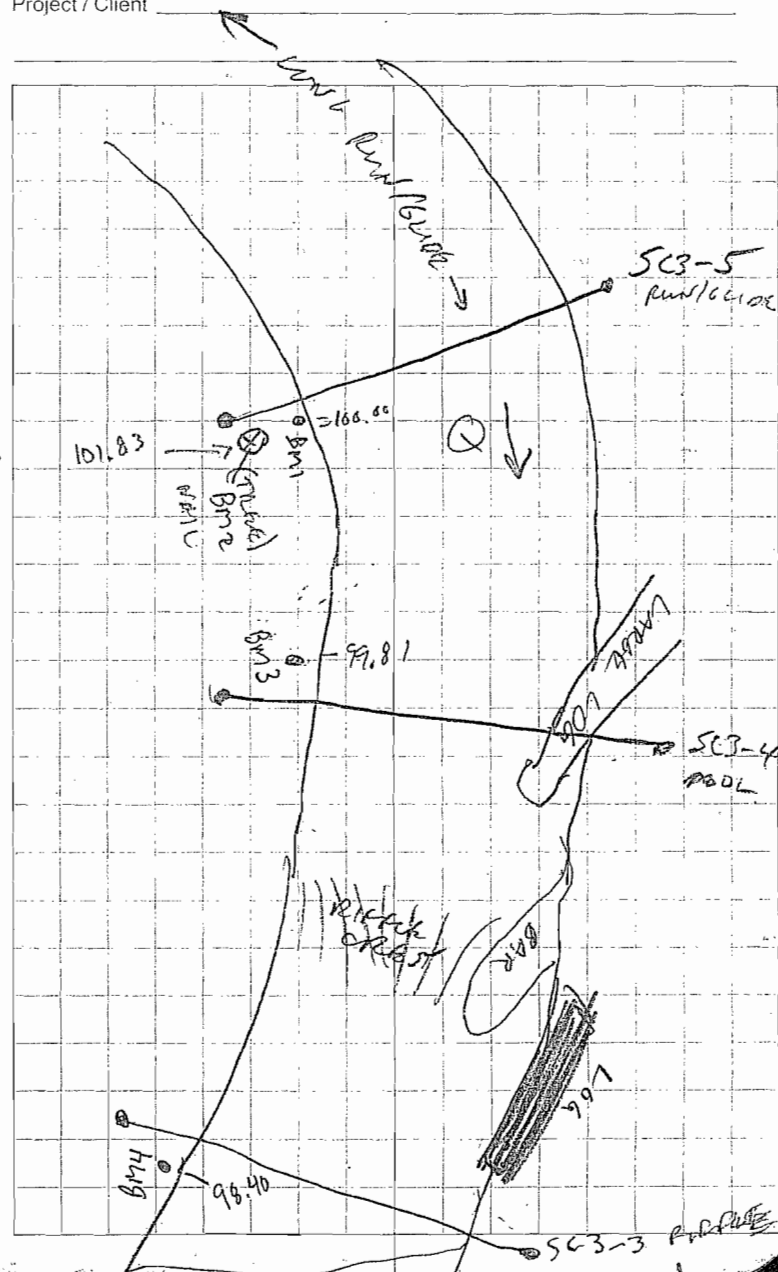
Location SWAMP & POND IA Date 7/17/07

Project / Client SC3-5 Run/GUDT

STA	BS	HI	FS	SUB	COM
Bm1 ^{note}	5.40	105.40		100.00	REBAR
Bm2			3.59	101.83	WHL
RWP ² SPARK 2			3.42	V66 100	(HIGH POINT)
5.0			3.82		
8.0			4.77		
12.0			5.19		
15.0			4.47		
18.0			4.53	V66	100?
21.0			5.10	V66	60
RWE/WSE 24.6			6.33		
LWE/WSE 79.0			6.33		
80.9			4.47	V66 100.	
82.4			1.95	V66	TOP OF Base
83.9 LWP			1.59	V66	FLOODPLAIN.
Bm3			5.59	99.81	

Location _____ Date _____

Project / Client _____



Location SULTANA ALKAM 1A Date 7/17/07
 Project / Client SC3-4 POOL w/ LOG

STA	BS	HI	FS	ELEV	
BM3	4.70	104.51		99.81	REBAR
BM1			4.51	✓ 100.00	REBAR @ 5'
RWP 2.0			3.62		
8.0			3.61		
16.0			3.47		
19.2			3.67		
21.7			3.31		
23			3.67		
24			4.21		
27			4.65		
RWP/LWP 32.8			5.44		
LWP/LWP					
82.7			5.44		
85			4.15	VEG	100
88			2.97	↓	↓
91			2.32	↓	↓
96.2 LWP			1.72	VEG	100
76.0			4.12		LOG 6064
77.6			3.19		LOG 4
79.0			4.02		LOG 6064
BM4			6.11	98.40	

Location _____ Date _____
 Project / Client SC3-3 RUTTING

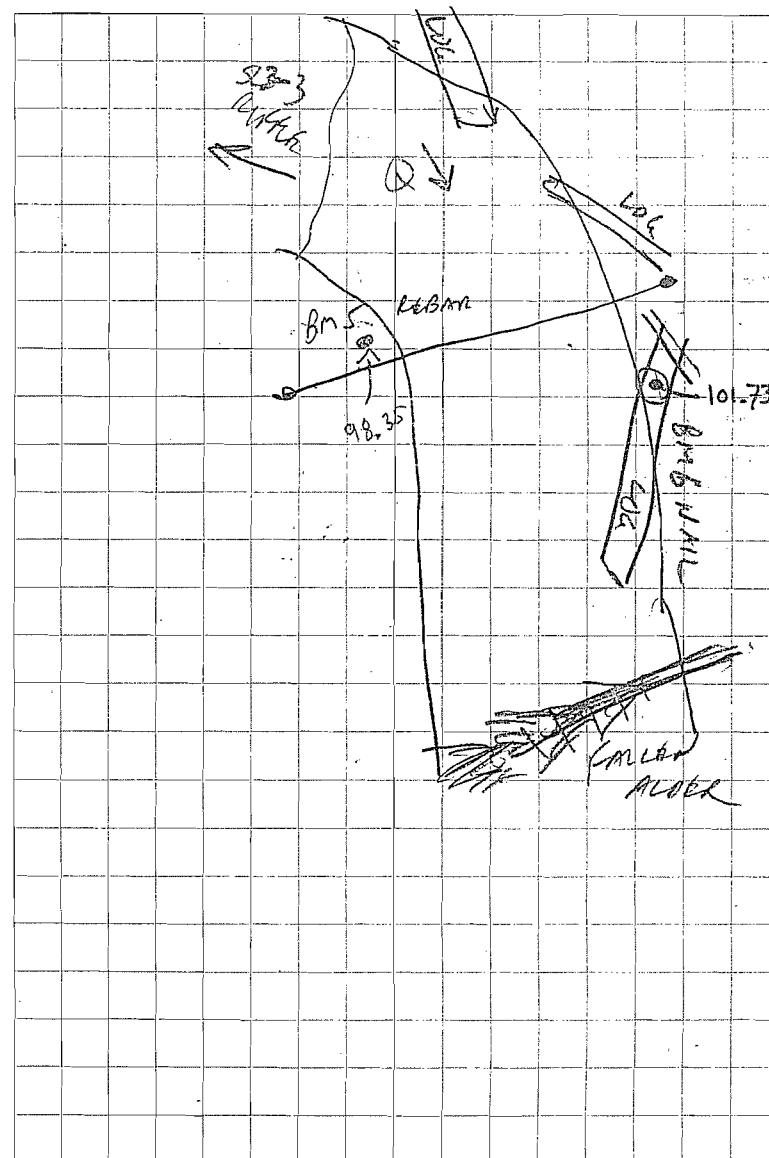
N.B. XSECTION PROFILE IS UNEVEN w/ DIFFERENT
WHEELS

STA	BS	HI	FS	ELEV	
BM4	4.63	103.53		98.40	
BM3			3.21	✓ 99.82	
RWP 2.0			2.46		
8.0			3.33		
13.0			3.36		
15.2			3.95		
16.4			4.83		
RWP/LWP 21.0			4.94		
28			5.33		
36			5.34		
43			5.05		
52 END RWP/E SIDE			5.07		
LWP BREAK					LATERAL DROP IN CASE ↓
58 BEGIN LWP/E SIDE			5.87		
67			6.91		
79.5			5.80		
82			4.70		
84			4.52		
88			3.33		
91			2.21		
93.4			1.02		
LWP 95.4			0.96		
BM4			4.63	✓ 98.40	

Location MUSTON R. ALBUQUERQUE Date 7/17/07Project / Client SC3-2 POOL EDGE(BETWEEN POOL & POOL TAILCUT)

STA	BS	H.I.	LS	ELEV	REMARKS
Bm 5	4.68		4.68	98.35	REBAR
Bm 4	4.68	103.03	4.68	98.40	REBAR
Bm 6			1.30	101.73	NAIL
Bm 6	1.97	✓ 103.70		SUB	1.00
Bm 5			5.34	VEG 98.36	100
RWP 2.0			4.30		
8.0			4.80		
14.0			5.36	✓	✓
19.0			5.86	VEG	100
22.0			6.44	VEG 11	SD
RWP (RWP)			6.86		(STA 61.0)
23.2					
WATER					
61.0			6.85		
(61.6 = 4' BANK ABOVE EDGE)					
61.5			6.00	VEG	100
63.3			5.59		
63.8			5.20		
65.0			4.97		
68.0			5.03		
70.0			4.43	✓	✓
71.9 RWP			4.02	VEG	100

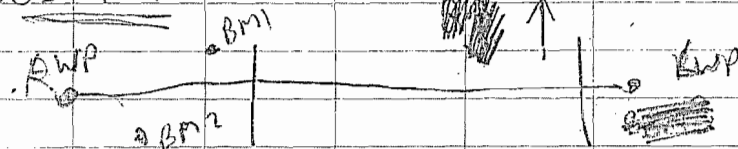
Location _____ Date _____

Project / Client SC3-2 POOL

Location SULTAN RIVER Date 7/12/07Project / Client SULTAN MAINSTREAM REACH 1A
REACH 1A TR 2 (FORMER 9)

STA	BS	HI	FS	ELEV	
Bm1	4.85	104.83		99.98	NAIL
Bm2			4.83	100.02	REBAR
-8			4.71		
-4			4.83		
2 RWP			5.45		STATE STAKE
6			6.69		
7.5			7.21		PERCH
7.6 RWP			8.01		DEPTH 0.01
157.3			8.23		DEPTH = 0.30
158.2			5.93		
159			5.48		
162			5.00		
LWP 167.8			3.64		
Bm3			2.00	102.83	NAIL ON LEFT BANK

SC3-1 Run:

Location SULTAN R. Date _____Project / Client SC3-1 RUN

STA	BS	HI	FS	ELEV	
Bm1	4.29	104.29		100.00	REBAR P'S
Bm2			3.22	101.07	REBAR W'S
LWP 66.7			3.25	VEG/100%	
62.0			3.14		
59.6			3.08		
58.3			3.27	✓	
57			4.02	VEG/100%	
53.5			4.03	1/8/80	
52.4			3.80	8/1/80	
51.6 (LWE)			4.47	8/1/80	(PERCHES)
50			4.65	8/7/80	DEPTH = 0.20
45 (LWE)			4.60	1/7/80	
43.4 (LWE/LWE)			4.86		(PERCHES)
40			4.92		
37			5.05		
36 LWE (LWE MAIN)			5.03		
6.8 RWE (AWP)			5.03	↓ ✓	
6.0			3.90	3/5/80	
3.5			2.48	3/5/60	
2.0 RWP			1.08	VEG/100	
Bm1			4.29	✓	

Location Sutton R. Phase 1A Date 7/12/07Project / Client SC2-5 POOLSTAGNANT WATER, NO OUTFLOW/INFLOW

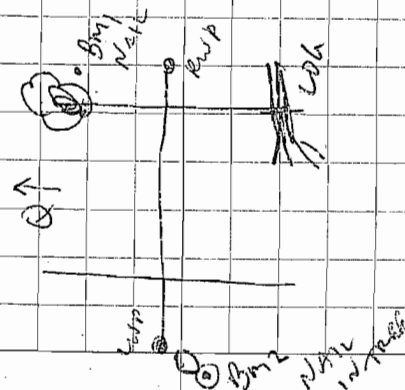
STA	BS	ICE	FS	ELEV
Bm 3	3.81			
Bm 4			7.59	
LWP 74.0			3.40	
63			4.28	
54			4.20	
45			4.86	
41			4.90	
39			6.54	
38			7.24	
37			8.08	
36			8.90	
33			9.48	
30.5 LWP/LWE			9.80	
9.5 RWS/LWE			9.80	
7.0			8.39	
6.0			7.96	
2.0 RWP.			3.02	

TOE OF
SLOPE

Location _____ Date _____

Project / Client SC2-4 POOLSTAGNANT WATER, NO OUTFLOW/INFLOW

STA	BS	ICE	FS	ELEV	
Bm 1	3.76	103.76			NAIL
Bm 2			2.97	100.79	NAIL
RWP 2.0			1.35		
5.0			3.60		
8.4			6.26		
10.0			7.00		
12.0 RWS/LWE			7.64		
35.5 LWS/LWE			7.65		
36			6.84		
39			5.72		
42			5.08		
46			4.80		
50.7 LWP			4.43		



Location 500 cfsDate 7/18/07Project / Client SC2-4 PoolSummary R RAIN 1A

STA	BS	IC	FS	ELEV
Bm1	4.11			
Bm2			3.31	
USE RUSE			7.60	
WSE			7.60	

STA	DEPM	VEL1	VEL2
2 RWP			
10.7 RWE	0	8	
12	0.35	0	
13	0.50	0	
14	0.60	0	
15	0.80	-0.01	
16	1.35	0	
17	1.60	-0.01	
18	1.85	-0.01	
19	2.20	-0.01	
20	2.45	-0.01	
21	2.65	-0.01	-0.01
22	2.95	0	0
23	2.90	0	0
24	2.95	0	0

Location _____

Date _____

Project / Client _____

STA	D	m (mm)	
		LOWEN	WATER
25	2.85	0.01	0.01
26	2.70	0.01	0.01
27	2.75	0.15	0.01
28	2.50	0.13	
29	2.35	0.13	
30	1.95	0.23	
31	1.85	0.23	0.23
32	1.70	0.35	
33	1.30	0.15	
34	0.60	0.18	
35.4	0	0	

PROV = LEVEL

TIA = METER

PHOTOS

- 1 - LOOKING U/S
- 2 - L → R
- 3 - LOOK D/S

SWOTTER 5750 PROPPING GA
 CAL 167 (NEW BATTERY)

Location SOD L/S Date 7/18/07Project / Client SL2-S PoolJohnson R Area 1A

STA	GS	HE	FS	DOUBLE	CONNECTION
BM3	3.70 ✓			✓	NAIL
BM4			7.46		REBAR (LOOSE)
LWSE			8.19		
RWSE			8.19		

STP	DEP	VEL1	VEL2	STAB
2.00 PUMP				
6.7	0	0		
8	-0.30	—		BLDR
9.4	1.5	0		
11.0	1.65	0		
12.5	2.00	0		
14.0	2.20	0		
15.5	2.45	0		
17.0	2.45	0		
18.5	2.40	0		
20.0	2.30	0		
21.5	2.15	0		
23.0	1.95	0		
24.5	1.90	0		
26.0	1.85	0		
27.5	1.90	0		

Location _____ Date _____

Project / Client _____

STA	DEP	VEL1	VEL2
29.0	1.75	0	
30.5	1.50	0	
32.0	1.30	0	
33.5	0.95	0	
35.0	0.65	0	
36.5	0	0	

PHOTOS

4 - LOOK W/S
 5 - L → R
 6 - LOOK O/S

9 - Louis 01/5

Location MURRAY R. Date 2/12/07Project / Client SC3-1 RUNREASONABLE Q - XSECT 2151.7

STA	BS	HI	FS	ELEV
BMI	4.65	104.65		100.00
Bm2			3.59	✓ 101.06
WSPK			5.17	
RWSPK			5.19	101.46

STA	DEP	VEL 1	VEL 2	SUB	T. DOM
2.0 RWP					
6.7	0	0		3/6	80
8	0.65	-0.44			
9.5	1.00	-0.48			
11.0	1.30	0.34			
12.0	1.60	0.24			
13.0	2.00	0.25			
14.0	2.15	0.29			
15.0	2.55	0.84	2.38		
16.0	2.45	1.96			
17.0	2.25	2.21			
18.0	2.45	1.47			
19.0	2.35	1.20			
20.0	1.70	1.47			
21.0	1.70	1.17			

Location _____ Date _____

Project / Client MURRAY R. RIVER 1A

STA	DEP	VEL 1	VEL 2	SUB	T. DOM
22.0	2.25	1.28			
23.0	2.00	1.02			
24.0	1.85	0.91			
25.0	1.80	0.56			
26.5	1.70	0.04			
28.0	1.50	0.36			
29.5	1.00	0.01			
31.0	0.50	0.19			
33.0	0	0			
35.0	0.25	0			
37.0	0.1	0			
39.0	-0.60	-0.01			
41.0	0.05	-0.01			
43.0	0.05	-0.05			
44.0	0	0			

PHOTOS

10 - LOOK L/S
 11 - LOOK R
 12 - LOOK D/S

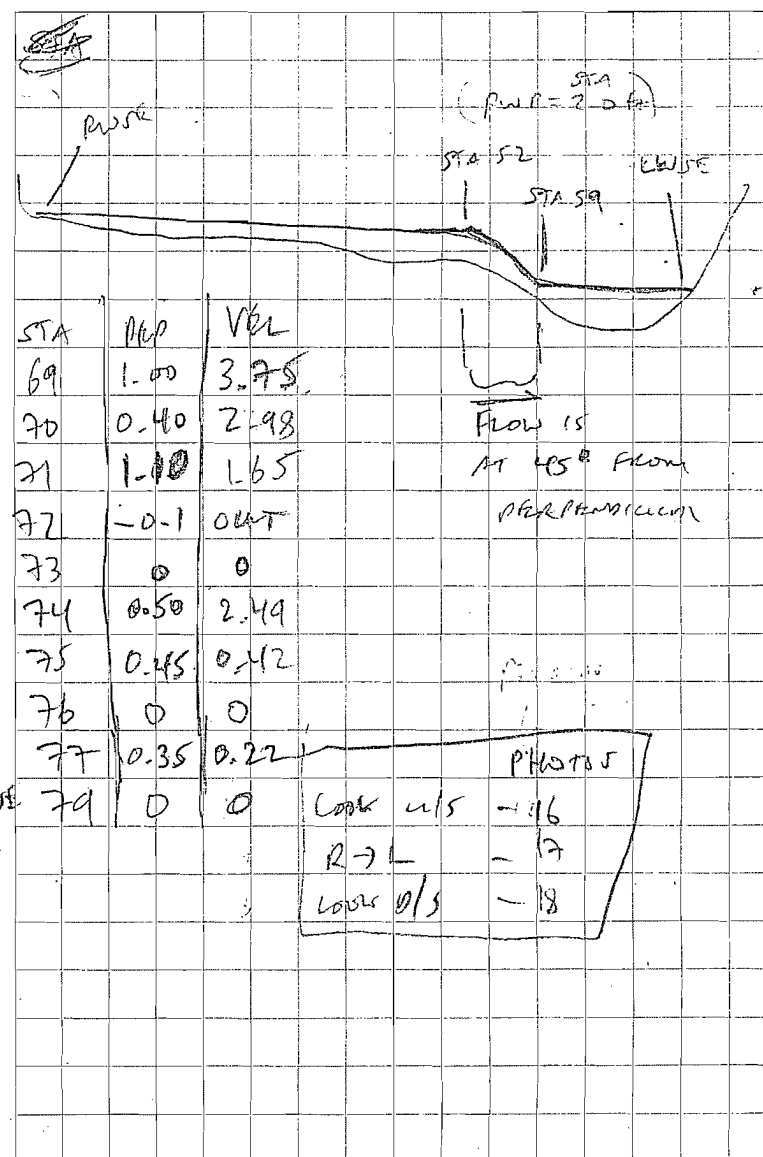
Location SDD CLS Date 7/18/07Project / Client R3-3 Dist. HSummit R. Reach 1A

STA	BS	HI	FO	EL	
BM 3	2.85	102.66		99.81	
BM 4			4.27	98.39	
BM 5			4.33	98.33	PLAN
BM 6			0.92	101.74	NATL
WSE			5.32		
WSE			4.45		
WSE @ STA 50			4.52		

STA	DEP	VEL	STA	DEP	VEL
2.0 R/W			45	0.05 ~ 0.05	
17.0 R/W	0	0	47	-0.1	OUT
19.0	0.10 ~ 0.10		49	0.15	1.07
21	-0.10	OUT	51	0.10	1.29
23	0	0	53	-0.35	OUT
25	0.40	1.57	55	0.05	1.24
27	0.30	1.31	57	0.15	0.76
29	0.40	1.29	59	0.20	0.52
31	0.40	1.42	61	0.50	2.32
33	0.15	1.39	62	0.75	2.39
35	0.40	1.20	63	0.80	2.79
37	0.20	1.13	64	1.00	3.73
39	0.30	0.17	65	0.90	4.46
41	0.15	0.71	66	1.15	3.93
43	0.15	0.87	67	1.00	4.57
			68	1.15	4.82

Location _____ Date _____

Project / Client _____



Location 500 LIDate 7/13/07Project / Client SG3-4 POOLSECTION A REACH LA

STA	BS	HI	FS	ELEV
B.M.3	4.85			
B.M.4			6.26	
WSP			5.40	
RWSP			5.41	

STA	DEP	WATER VH1	WATER VH2
-----	-----	--------------	--------------

2.0 WSP

31.5	0	0	
34.0	0.25	~0	
36.5	0.65	~0	
39.0	0.90	0	
41.5	0.60	0.06	
44.0	1.25	0.24	
46.5	1.65	0.20	
49.0	1.70	0.27	
51.5	1.85	0.36	
54.0	2.05	0.47	
56.5	2.75	0.28	0.64
59.0	2.75	0.45	0.55
61.0	3.00	0.35	0.69
63.0	3.00	0.41	0.63
65.0	3.70	0.20	0.39

Location _____

Date _____

Project / Client _____

STA	DEP	VH1	VH2
67	3.90	0.25	0.59
70	4.10	0.22	0.53
72	4.05	0.32	0.54
74	3.80	0	0.26
76	3.10	0	0
LOG	ANGLED	FROM	COVER
79	1.90	0	
81	0.80	0	
82.8	0	0	

COVER 00.4/5

COVER 00.4/5

PROPOS

19 WORK W/S

20 R → L

21 WORK D/S

Project / Client

SC3-6

REFFUSE

Staff page: 7.25" @ 13:35

STA	BS	HI	IS	HI - IS
BM1	4.04			100.00
BM2			4.26	
1+56			5.86	
2+56			6.05	

STA	Dist	VEL	STA	Dist	VEL
30 RWP					
41.2	0.20	0	41	0.55	2.12
77	-0.1	Out	42	0.65	0.86
85	0.3	1.29	40	-0.60	Out
62	0.55	0.72	37	0.30	2.16
79	0.50	0.51	34	0.60	1.92
76	0.15	0.38	31	2.25	1.40
73	0.40	0.77	28	0.05	1.40
70	0.75	0.55	25	0.60	0.44
67	0.80	0.91	22	0.50	1.53
64	1.05	0.98	19	0.50	2.59
61	0.85	1.01	16	0	0
58	1.10	1.24			
55	0.80	1.23			
52	0.80	1.31			
49	0.60	1.70			

Project / Client

Листов в книге

Photos

25 $\log_{10} 10^5$
26 $R \rightarrow L$
27 $\log_{10} 0.1$

34

Location

Page 1A

5000 R 500 d

Date _____

2/8/67

Project / Client

MAIN stem TR 8

9.1	61	100	1.1	66.6
9.2	65.4	104.54		
9.3			4.56	
9.4			7.46	97.08
9.5			7.38	
9.6			CAN'T SEE IN MIST	

STA	DEP	WEL
3200		
31	0	0
32	1.00	1.11
39	1.25	1.28
45	1.30	1.49
34	1.50	0.98
37	1.50	1.44
43	1.70	1.83
49	1.30	1.85
55	1.50	1.21
61	1.20	1.69
67	1.50	1.71
73	1.50	1.56
79	1.20	1.25

Location

Date _____

35

Project / Client

	MEAN	LOWEST	HIGHEST
STA	WIND	SPEED	DIRECTION
85	1.60	1.20	
91	1.60	1.40	
97	2.20	1.51	
103	2.05	1.51	
109	2.65	1.04	1-69
115	2.95	1.18	1.88
121	3.25	1.00	1.80
127	3.40	1.18	1.65
133	3.40	1.23	1.60
139	3.85	1.25	1.58
144	4.10	1.74	1.48
150	4.5	0.60	1.09
156	1.2	0.10	
157	0.0	0.0	

OH VEG COVER
" " "

Notes:

- 22 L.H. 1/1
- 24 L.H. 1/1
- 30 L.H. 1/5

36

Location _____ Date _____

Project / Client _____

[illegible]

37

Location _____ Date _____

Project / Client _____

This image shows a full page of blank graph paper. The grid consists of small squares formed by thin black lines. There are approximately 20 columns and 20 rows of squares. A few small dark specks or dust particles are visible on the paper, most notably one near the center-left and another towards the bottom right. The overall appearance is that of a clean, unused sheet of standard graph paper.

Location 21000 R. STRD Date 7/18/07
Project / Client MA - ST/CM - 102 - 102025
AGENCY

SPA	DIP	VEL	SPA	DIP	VEL
30 RWP + RUCR		ROST			
23.0 RWE	0	0	73	2.10	2.06
73	0.40	0.34	78	2.25	2.07
83	0.50	1.14	83	1.90	2.61
38	0.75	1.13	88	2.40	2.29
43	1.00	1.31	93	2.70	1.81 / 2.50
48	1.15	1.60	98	3.00	2.06 / 2.79
53	1.40	1.90	103	3.10	2.02 / 2.89
55	1.50	1.72	108	3.10	1.71 / 2.14
63	1.60	1.93	113	3.10	1.68 / 1.91
68	1.65	1.73	118	2.90	1.48 / 2.12
			123	2.75	1.69 / 1.98
			128	2.60	1.12 / 1.93
			133	1.75	1.46
			138	1.25	1.08

wt	142.6	0.4	0.4 , 0
----	-------	-----	--------------------

1426/0-4 La

N.B.

59A 108- 192.6 = N100'

JW OFFER	Mentor
----------	--------

Location _____ Date _____
Project / Client _____
SHSM From RIGGS BANK

STA	BS	HI	FS	ELEV	
B.M.	1.70				= N.A.L. on HILL ON C. ROAD
LWP 145.8			3.97		
143.4			4.87		~ 30 ft
WSE			7.26		915 ft
RUSE			7.31		850 ft
17.0			6.88		
12.0			6.52		
8.0			6.39		
3.0 RWP			6.13		
-8.0			5.86		
-18			5.02		
TOP OF FENCE POST				2.67	

Photo

31 - Look N. E →

(too misty for
w/s of D.H. notes)

Location SUCROW R. MARK 18 Date 7/19/07Project / Client SC-2 300PHOTO 32 = BULKSC2 DRY AT TOP; RESIDUAL
STEELWORK IN MOUNTAINPHOTO 33 - LOOK W/S } SC2-4
34 - LOOK D/S } 100235 - LOOK W/S } SC2-5
36 - LOOK D/S } POOL +
POU ON
SLOPE

SC2-5 POOL W/SE < RIFLE CASE

WILL NOT GET W/SE'S, AS

WATER LEVEL MEANS TO BE
DROPPING AS CHANNEL
DRAINS THROUGH GRAVEL.PHOTO 37 - LOOK W/S } SC2-6
38 - LOOK D/S } CENTRAL
PIT.

Location _____ Date _____

Project / Client _____

STA	BS	HI	FS	ELEV
SC2-6 BM1	3.69	103.69		
BM2			2.80	
W/SE AT HEAD OF SC-2 = STAFF 6' 10" 1/2 12.25" @ 8.25 mm TP			4.98	
TP	8.66	106.78	5.57	98.12
BM4			7.81	
C SC2-5 BM3			4.05	102.73
BM3	3.37	105.60		
TP			8.47	98.13
TP	5.49	103.62		
BM1			3.62	

REBAR

Location 300 2 f

Date 2/19/07

Project / Client SC3-1 RAIL

MOUNTAIN R RAIL 1A

STA	BS	HI	FS	ELEV	
Bm 1	5.09	105.09			
Bm 2			4.03 ✓		
LWSE			5.88		
RWSE			5.89	99.20	
50' w/s			6.21		DECK = 0.44
50' o/s			6.04		
PHOTOS 39 LOOK W/S 40 L → R 41 LOOK O/S					
STA	DEP	VEL			
2.0 RWP			20	1.35	0.53
7.2 RWP	0	0	21	1.45	0.17
8.0	0.40	-0.02	22	1.90	0.55
9.5	0.95	-0.28	23	1.70	0.52
11	1.15	0.03	24	1.60	0.17
12	1.60	0.00	25	1.50	0.32
13	1.90	0.03	26.5	1.45	0.10
14	2.10	0.26	28.0	1.20	0.06
15	2.20	0.92	29.5	0.70	~0.03
16	2.00	1.23	31	0.25	0.06
17	2.00	1.14	33	-0.25	0.01
18	2.05	1.13	35	-0.15	0.01
19	2.05	0.86	37	0	0

Location

Date 7/19/07

Project / Client SC3-2 RAIL

STA	BS	HI	FS	ELEV	
BMS	4.79				PEAK
BM6			1.40 ✓		NAIL
LWSE			6.38		
RWSE			6.36		
WSE 50' P/S			6.40		
					42, 43 LOOK W/S
					44 R → L
					45 LOOK P/S
STA	DEP	VEL	PHOTOS		
2.0 RWP		(LOWE / WATER)			
23.5 RWP	0	0	STA	DEP	VEL
24	0.10	0	50	3.00	0.34 / 0.53
26	0.65	- 0.04	51	2.65	0.42 / 0.70
28	1.20	- 0.14	52	2.55	0.44 / 0.74
30	1.55	- 0.11	53	2.50	0.68
32	1.85	0.00	54	2.35	0.79
34	2.20	0.00	55	1.85	0.68
36	2.85	0.00 / 0.00	56	1.85	0.52
38	3.05	0.00 / 0.00	57	1.80	0.36
40	3.15	0.00 / 0.02	58	1.70	0.32
42	3.15	0.00 / 0.05	59	1.60	0.41
44	3.45	0.01 / 0.10	60	1.35	0.14
46	3.20	0.20 / 0.20	61.3 W/S	1.35	0.01
48	3.00	0.37 / 0.48	W/C		
49	3.00	0.40 / 0.53	BANK		

Location 300 L/S Date 7/19/07Project / Client SC3-3 RUTHERsummit R GREEN LA

Bm3

3.18 ✓

STA	BS	IS	FS	ELEV
Bm 5	4.64" ✓	102.97		98.33
Bm 4			4.59 ✓	98.38
WSE			5.81	
WSE @ STA 50			5.00	
WSE			4.92	
soft u/s } R			4.20	
soft d/s } WSE			5.47	

STA	DEP	VEL	STA	DEP	VEL
20.0 PWP			51	0	0
23	0	0	53	-0.55	out
25	0.25	0.37	55	-0.10	out
27	0.15	0.35	57	0.01	0.05
29	0.20	0.19	59	0.05	0.10
31	0.25	0.23	61	0.25	0.00
33	0.10	0.59	62	0.45	1.40
35	0.25	0.52	63	0.60	1.87
37	0.15	0	64	0.75	2.26
39	0.10	0.37	65	0.70	3.14
41	0.00	0.0	66	1.00	3.34
43	0.05	0.45	67	0.85	3.61
45	-0.1	out	68	0.95	2.57
47	-0.3	out	69	0.80	2.05
49	0.01	0.05	70	0.20	1.64

Location _____ Date _____

Project / Client _____

PHOTOS

46 Look u/s
47 R → L
48 Look d/s

STA	DEP	VEL
71	0.90	1.15
72	out	—
73	out	—
74	0.30	0.69
75	0.30	1.19
76	out	—
77	0.10	0.46
78 WE	0	0

46

Location

300 c/s

Date

7/19/07

Project / Client

SC3-M Pool

SUMMIT R BEACH 1A

STA	BS	HC	FS	ELEV
Bm 4	6.28 ⁴	104.67		98.39
Bm 3			4.87	99.80
LWSE			5.68	1
RWSE			5.69	
WSE		(USE TR 5)	(DY TR 4-5 = 70 ft)	
SD P/S			5.80	

STA	DEP	VEL	STA	DEP	VEL
20 RWP			67	3.65	0.08 / 0.26
33	0	0	70	3.80	0.21 / 0.21
34.0	0.05	0	72	3.75	0 / 0.29
36.5	0.40	0	74	3.30	0 / 0.01
39	0.70	0	76	2.85	0
41.5	0.30	0	LOG		
44	1.00	0	79	1.80	0
46.5	1.40	0	81	0.60	0
49	1.60	0.01	82.2	0	0
51.5	1.60	0.06			
54	1.85	0.14			
56.5	2.55	0.17			
59	2.50	0.27			
61	2.80	0.23 / 0.31			
63	2.80	0.18 / 0.38			
65	3.40	0.12 / 0.20			

Photos

49 Look W/S

50 ~~Look W/S~~ R→L

51 Look D/S

Location

300 c/s

Date

7/19/07

47

Project / Client

SC3-5 Run / Guide

STA	BS	HC	FS	ELEV
Bm 3	5.99	105.80		99.81
Bm 2			3.97	101.83
Bm 1			5.80	100.00
LWSE			6.80	
RWSE			6.80	
SD P/S			6.79	

STA	DEP	VEL	STA	DEP	VEL
20 RWP			60	1.80	0.37
25.0 RWP	0	0	62	2.10	0.32
26.5	0.40	0	64	1.80	0.22
29.0	0.80	0	66	1.50	0.04
31.5	0.70	0.01	68	1.65	0.26
34.0	1.10	0.01	70	1.55	0.06
36.5	1.15	0.12	72	1.40	0.05
39	1.35	0.02	74	1.15	0.05
41.5	1.45	0.11	76	0.75	0.01
44.0	1.40	0.10	78	0.40	0
46.5	1.35	0.15	78.9	0	0
49.0	1.55	0.15			
51.5	1.55	0.26			
54.0	1.05	0.31			
56	1.60	0.32			
58	1.75	0.25			

Photos S253 Look W/S

54 R→L

55 Look D/S

Location 300 cfs ✓ Date 5/19/07Project / Client SC3-6 PUTTLE

STAFF GAGE = 4.675" @ 11:55 am

TRID STA	RHP BS	NEAR STAFF GAGE HS	FS	EL ELEV
BM1	2.75	102.75		100.00
BM2			2.97 ✓	99.78
LWSK			4.73	
RWSK			4.99	
SD' u/s			4.50	
SD' o/s			5.17	

STA	DEP	VEL	STA	DEP	VEL
2.0 RWP			58	0.70	0.94
18 RWP	0	0	61	0.70	0.70
19	0.20	2.73	64	0.90	0.66
22	0.35	1.17	67	0.80	0.22
25	0.50	1.02	70	0.50	0.56
28	0.45		73	0.30	0.40
31	0.45		76	0	0
34	0.25	0.68	79	0.20	0.82
37	0.20	0.99	82	0.20	0.92
40	0.45		85	0.10	
43	0.55	0.66	88	0.45	0.36
46	0.50	1.14	91	0	0
49	0.40	0.86			
52	0.65	0.43			
55	0.50	0.86			

Location _____ Date _____

Project / Client Sumner R March 2A

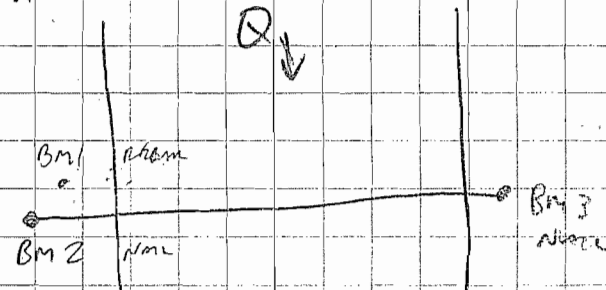
PHOTOS

56 Look u/s

57, 58? R → L

59 Look o/s

MANUSCRIPT TR 8



MANUSCRIPT TR 8 20PK

STA	BS	FS
BM2 o/s	0.61	
34 RWP		4.19
35 10 ft u/s		3.68
LWSK @ X SECT		3.77
BM1	0.59	
34 RWP		3.92
35 10 ft u/s		3.77

ΔX turn = 134 ft u/s → o/s

300 cts

7/17/07

SULPHUR & MAINSTAY TR 8

STATION 1A

STA	BS	HI	FS	ELEV	
Bm1	4.09	104.09			R. Bank
Bm2			4.11 ✓		Same
Bm3			1.28 ✓		
WSPK			7.20		
RWSPK			7.27	96.82	
100' WSPK					
100' WSPK					
STA	DEP	VEL 1	VEL 2	SUB	% DOM
2.0 RWP					
8.0	0	0		2/6	80
13	0.65	0.66		5/7	50
19	1.00	1.11		7/6	60
25	1.10	1.22		6/5	60
31	1.30	0.45		5/8	50
37	1.30	1.25		6/4	50
43	1.50	1.07		5/7	50
49	1.05	1.59		7/5	60
55	1.15	1.42		8/7	60
61	1.45	1.24		7/4	60
67	1.20	1.17		4/3	60
73	1.25	0.85		6/8	60
79	1.00	1.08		5/6	60
85	1.35	0.88		6/5	60
91	1.35	1.03		4/3	60

STA	DEP	VEL 1	VEL 2	SUB	% DOM
97	1.85	1.00		4/8	60
103	1.80	0.90		5/4	60
109	2.30	0.96		5/6	80
115	2.70	0.97	1.11	5/6	60
121	2.95	0.76	1.28	5/8	60
127	2.80	0.88	1.11	4/5	80
133	3.10	0.82	1.06	4/5	80
139	3.50	0.89	1.00	4/6	80
144	3.75	0.48	0.84	8/5	60
150	4.10	0.06	0.61	8/1	80
156	0.80	0.09		1/6	90
157.2	0	0		1	100
WSPK					
OH WSPK COVER (see plans)					
R. Bank	SUB = VEL	STA > 157.2			
R. Bank	SUB = VEL	STA < 8			
PIKETS	60, 61	LOOK N/S			
	62	R → L			
	63, 64	LOOK N/S			

Location Reedy IA

Date

7/19/07Project / Client Sullivan R. Main Street TR 7
(High flow measurement by MRA) MID-2

LWP

STA	BS	HI	FS	ELEV	SUB	1. Pom
Bm1	0.36					
HPI			0.96			
122.8 LWP			2.61			13/90%
117			3.56			17/90%
111			3.83			17/90%
108			4.62			6/4/60%
105			4.94			8/6/50%
104 LWP/WSE			5.04			7/8/80%
70 ft d/s			5.29			MURR R. BANK
70 ft d/s			4.98			
WSE			4.97			
19			4.70			6/8/60%
16			4.76			5/7/60%
13			3.97			4/1/60%
RWP 11			1.07			VEG 100%

STA	DEL	VEL1	VEL2	SUB	1. Pom
11.0 RWP				VEG	100
22.8 RWP				5/6	60
24	0.05		0.05	8/6	50
28	0.25		0.31		
32	0.50		0.57		
36	0.60		1.11		
39	0.3		OUT		
40.7	0.90		0.98		
45	1.30		1.00		

Location

LAW 106 344

Date

8/3/07

Project / Client

NOTE: MRA USED L. BANK LOOKING U/S
CONVERSION WE USE
LOOKING D/S

STA	DEL	VEL1	VEL2	SUB	1. Pom
✓ 49.2	1.35		1.28		
✓ 53	2.05		1.72		
✓ 57	1.95		1.79		
✓ 61	2.05		1.66		
✓ 65	2.05	2.07			
✓ 69	2.65	1.81	2.47		
73	3.15	1.89	2.92		
77	3.15	2.19	2.90		
81	3.25	1.93	2.88		
85	2.10	2.27			
88.5	1.85	1.61			
93	0.90	2.01			
96.5	0.60	0.21			
100	0	0			
104	0	0			
				8/7	60
PHOTO	65, 66	LOOKING U/S			
	67, 68	LOOKING D/S			
	69	R → L			

STA	SUB	1. Dom	STA	SUB	1. Dom
2 comp	VEH	100	26	5/7	60
4	VEH	100	27	6/5	80
6	VEH	100	28	7/6	80
8.5	VEH/1	50	29	5/6	60
8	8/4	60	30	6/5	60
9	4/6	80	31	6/7	60
10	5/6	60	32	7/6	80
11	5/4	60	33	6/7	80
12	5/6	80	34	6/7	60
13	5/6	80	35	6/5	50
14	5/6	60	36	6/5	60
15	5/7	60	38	7/5	60
16	5/6	60	40	7/6	60
17	6/5	50	42	5/7	60
18	5/6	60	44	5/7	80
19	6/5	60	46	7/8	60
20	5/6	80	48	1/7	80
21	5/6	60	50	VEH/1	60
22	6/5	60	51	VEH	
23	7/6	50	52		
24	5/6	80	54		
25	5/6	80	55		

56.5 comp VEH

PHOTO 7/20/07

76 - WORK 0/5

77 - L → R

78 - WORK 0/5

STA	SUB	1. Dom	STA	SUB	1. Dom
2.0 comp	VEH	100	37	1/VEH	60
6	8/1	60	38	VEH	100
8	8/5	60	39		
9.4	8/7	80	41		
11	7/8	80	45		
12.5	7/6	60	54		
14.0	7/6	60	63	✓	✓
15.5	7/6	60	74	VEH	100
17	7/6	60			
18.5	7/6	60			
20.0	7/6	60			
21.5	4/5	80			
23.0	4/3	60			
24.5	4/3	60			
26.0	3/7	80			
27.5	3/7	80			
29.0	2/7	80			
30.5	2/1	80			
32.0	1/2	50			
33.5	1/2	60			
35	1/2	80			
36.5	1	100			

PHOTO

73 - WORK 0/5

74 - L → R

75 - WORK 0/5

Location Location 2 REASON 1A Date 7/20/07Project / Client FR-7 Low Flow

STA	BS	IFS	FS	ELEV	
BMI	0.50				NAIL
HP			0-10	USING	REASON
LWSE			4.86	REASON	
RWSE			4.82		
RWP			0.61		
STA	DEP	VEL1	VEL2	SUB	% DOM
11.0 RWP				= 11.65	LWP
26.5 RWE	0	0		8/6	80
28	0	0		8/6	80
32	0.20	0.41		8/7	60
36	0.30	0.22		8/7	60
39	OUT			8/7	80
40.7	0.60	0.32		8/7	60
45	1.00	1.02		7/6	60
49.2	1.50	0.75		8/7	50
53	1.60	0.23		8/7	80
57	1.55	1.67		8/6	80
61	1.75	1.81		8/7	80
15	2.50	1.46		7/8	60
69	2.70	1.58	1.87	8/7	60
73	2.85	1.58	2.46	8/7	60
77	2.85	1.94	2.40	8/7	80

Location _____ Date _____

Project / Client _____

STA	DEP	VEL1	VEL2	SUB	% DOM
81	2.90	1.57	2.21	8/7	60
85	1.70	1.92		8/7	60
88.5	1.60	1.47		8/7	60
93	0.70	0.94		8/7	60
96.5	0.35	0.24		8/7	80
100					
LWE 99.3	0	0			

PHOTOS

71, 80 Low w/s

81 R-S-L

82, 83 Low p/s

Location SAVAN R. REARM 1A Date 7/20/07
 Project / Client TRB Low Flow

STA	BS	HS	FS	FEET	
Bm1	4.11				REBAR
Bm2			4.03 ³ ✓		NAIL
Bm3			1.29✓		L. Bm
LWSK			7.42 ⁸		
RWSK			7.47 ⁸		

STA	DEP	VEL 1	VEL 2	
2.0 RWP				
9.75 RWP	0	0		
13	0.50	0.39		
19	0.80	0.85		
25	0.90	1.18		
31	1.05	0.46		
37	1.10	0.65		
43	1.30	1.42		
49	0.90	1.27		
55	1.00	0.07		
61	1.20	1.12		
67	1.05	0.94		
73	1.10	0.89		
79	0.80	0.89		
85	1.05	0.72		
91	1.10	0.79		

Location _____ Date _____
 Project / Client _____

STA	DEP	VEL 1	VEL 2	
97	1.65	0.61		
103	1.60	0.65		
109	2.15	0.64		
115	2.50	0.69		
121	2.75	0.46	0.87	
127	2.6	0.53	0.84	
133	2.95	0.47	0.68	
139	3.40	0.38	0.71	
144	3.60	0.30	0.55	
150	3.90	0.00	0.37	
156	0.60	0.0		
157	0	0	LWE	
PL 0.95				
84.81 - Low d/s				
86 12 → L				
87.88 - Low d/s				

Location SC3-2 Pool Date 2/20/07Project / Client Johnson River Reach 1A
Low-Q

STA	BS	HI	FS	DSB	
BM5	4.62				Left Bank
BM6			1.23		Right
LWSR			6.37		
RWSR			6.37		
STA	DEP	VEL1	VEL2	SUB	1. DOM.
2.0 RWSR				UG	100
24.3	0	0			
26	0.45	0		2/6	60
28	1.00	0.11		5/2	80
30	1.40	0.07		6/1	60
32	1.85	0.01		6/1	60
34	2.00	0		6/5	60
36	2.50	0		5/1	50
38	2.85	0	0	6/1	50
40	3.00	0	0	5/6	50
42	3.15	0	0	5/5	50
44	3.25	0	0	6/5	60
46	3.00	0.09	0.01	8/2	60
48	2.90	0.16	0.25	8/7	50
49	2.80	0.14	0.27	6/7	60
50	2.80	0.27	0.29	8/7	60
51	2.50	0.33		8/7	60

Location _____ Date _____

Project / Client _____

STA	DEP	VEL1	VEL2	SUB	1. DOM.
52	2.40	0.32		7/6	50
53	2.30	0.47		8/2	50
54	2.15	0.29		8/7	60
55	1.85	0.29		7/6	60
56	1.70	0.03		7/6	60
57	1.60	0.02		7/6	60
58	1.50	0.12		7/6	60
59	1.40	0.21		2/6	60
60	1.05	0		2/6	60
61.3	1.00	0		2/6	60
ULC BANK					
PHOTOS					
89, 90 Low 4/5					
91 R-L					
92, 93? Low 0/5					

Location Runway R. Runway 1A Date 7/1/07Project / Client SC3-3 PIERCECDOT PIERCE

STA	BS	HS	F.I.	F.C.G.V.
BM 4	4.24	102.62		98.38
BM 5			4.30	✓ 98.32
1. LANE			5.59	
R. LANE			4.75	
WSD @ STA 50			4.71	
STA	DEP	VEL	SUB	T. DOM
2.0 RWP			VEL	100
8				
13				
15.2				
16.4			VEL	100
17			5/VEL	60
19			6/VEL	60
21			6/5	60
23			7/6	50
24.3 LANE 0		0		
25	0.1	0.05	7/8	50
27	0.05	0.05	6/7	60
29	0.10	0.05	7/6	50
31	0.10	0.73	7/5	60
33	0	0	7/5	60
35	0.15	0.11	6/5	60
37	0.05	0.05	6/5	50
39	0.05	0.05	6/5	50

Location _____ Date _____

Project / Client _____

STA	DEP	VEL	SUB	T. DOM
41		OUT	6/5	50
43	0.05	0.01	6/5	30
45		OUT	7/6	60
47		OUT	7/6	60
49	0	0	7/6	60
51	0	0	7/6	60
53		OUT	7/6	80
57	0	0	7/6	60
59	0	0	6/7	60
61	0.20	0.24	7/5	60
62	0.20	0.24	7/6	60
63	0.45	1.00	6/5	60
64	0.55	1.51	6/5	60
65	0.55	1.98	7/6	60
66	0.80	2.29	7/6	60
67	0.80	0.96	7/6	60
68	0.85	1.60	7/6	60
69	0.63	1.27	7/6	60
70	0.70	0.62	8/7	60
71	0.70	0.71	8	100
72	OUT		8	100
73	OUT		8	100
74	0.20	0.18	7/8	60

no flow (const)

STP	DEN	UCL	SUB	% DOM
25	0.15	0.46	2/1	60
26	OUT		2/6	60
77	0	0	2/6	60
79			2/6	80
79.5			7/6	80
82			V66	100
84			↓	↓
88			↓	↓
91			↓	↓
93.4			↓	↓
95.4			V66	100

1. 4. 70.

94 - 1000 - 1000

93 - R-5C

96	1.2.15
----	--------

Location _____ Date _____

Project / Client _____

A large grid of graph paper, consisting of 20 columns and 20 rows of squares. The leftmost column is shaded with a dark gray, textured pattern. The rest of the grid is white with light gray grid lines.

Location

LA. MAN

Date

2/20/00

Project / Client

563-4 POOL

SUMMIT & REACH LA

STA	CU	HE	FS	PLAN	
10.3	4.57	104.38		99.81	
11.4			605 5.99	98.39	
12.6			5.53		
13.8			5.58		
15.0			4.38	✓ 100.00	
STA	DEL	VEL1	VEL2	TIME	1.00m
2.0	DEL	VEL1	VEL2	VEG	100
8					
16					
19.2					
21.7					
23					
24					
27				VEG	100
31.5				7/2	60
34	34.5 = WE			6/5	70
36.5	0.20	0		7/6	50
39	0.40	0		6/7	60
41.5	0.10	0		7/5	60
44	0.60	0		6/7	60
46.5	1.20	0		7/6	60
49	1.40	0		7/6	80
51.5	1.80	0		8/7	60

Location

Date

Project / Client

STA	DEL	VEL1	VEL2	TIME	1.00m
54	2.20	0.01		8/1000	80
56.5	2.35	0.02		8/7	50
59	2.25	0.10		8/1000	60
61	2.60	0.05	0.14	8/7	60
63	2.70	0.07	0.18	8/7	80
65	3.30	0.05	0.09	8/7	80
67	3.45	0.01	0.14	8/7	80
70	3.70	0.07	0.07	8/7	80
72	3.40	0	0.03	8/2	60
74	3.10	0	0	7/6	80
76	2.65	0	0	7/6	80
79	1.5	0	0	7/8	60
81	0.4	0	0	7/2	80
82.8				7/2	80
(81.9)	0	0			
92					
98					
99					

Location Runway A, Beach 1A Date 11/1/10Project / Client SCB-5 RunwayLow-Q

STA	BS	HT	FS	ELG	PRISM
BM1	5.955	5.51			PRISM
BM2			3.68	✓	PRISM
21.5			6.64		
22.5			6.70		
STA	PLP	VEL	Dist	1/5m	
23.5			2.1	80	
25.5	0.20	0	2.1	80	
26.5	0.20	0	2.1	80	
27.5	0.60	0	2.1	50	
28.5	0.55	0	2.1	60	
29.5	0.90	0	6/7	60	
30.5	1.00	0.01	6/5	60	
31.5	1.15	0	6/7	80	
32.5	1.25	0.01	7/8	70	
33.5	1.20	0	7/6	60	
34.5	1.25	0.01	6/2	80	50
35.5	1.35	0.01	7/6	60	
36.5	1.40	0.08	7/6	60	
37.5	0.90	0.10	8/7	60	
38.5	1.40	0.01	7/7	50	
39.5	1.60	0.00	7/7	50	

Location _____ Date _____

Project / Client _____

STA	PLP	VEL	Dist	1/5m	
60	1.60	0.14	8/7	60	
62	1.75	0.12	7/8	60	
64	1.85	0.01	7/8	60	
66	1.50	0.01	8/7	80	
68	1.45	0.08	8/7	60	
70	1.30	0.01	8/7	60	
72	1.20	0	8/7	80	
74	0.95	0	8/2	60	
76	0.55	0	7/6	60	
78	0.20	0	7/6	80	
79.3			7/6	80	
(79.3)	0	0			
PRISM					
100, 101 Low 4/5					
102 R-7L					
103 Low 2/5					

Location SC3-6 CONTROL - RIVER Date 2/20/97

 Project / Client INTERIOR RE PHASE 1A

STAFF GAGE = 2.675' @ 2:20 pm

STA	FS	HC	FS	BACK	
Bm 1	2.85			100.00	
Bm 2			3.08		
WASH			4.98		
BRUSH			5.26		→ 10' A LOW SL → → 4' 5" L WASH R/W
STA	DEP	WCL	WCL	WCL	CHP
2 = R/W					ALIVE
16			8/7	60	
19	0.15	0.72	6/7	60	
22	0.10	1.25	7/6	80	
25	0.25	0.54	6/2	60	
28	OUT	(CONC. TART 3' 0" W)			
31	OUT	(CONC. TART 3' 0" W)			
34	0.35	0.27	7/8	50	
37	0.30	0.25	8/10	800	
40	OUT		8	100	
43	0.50	0.20	8/10	800	
46	0.50	0.79	8/7	80	
49	0.25	0.19	7/8	20	
52	0.50	0.13	8/6	80	
55	0.30	1.00	8/5	80	
58	0.60	0.63	8/7	50	
61	0.50	0.64	9/7	60	

Location

Date

Project / Client

STA	DEP	WCL	WCL	WCL	CHP
64	0.75	0.55	8/7	80	
67	0.70	0.21	8/7	80	
70	0.45	0.36	8/7	80	
73	0.25	0.17	7/6	60	
76	OUT		8/7	60	
79	0.10	0.05	8/6	80	
82	0	0	8/7	60	
85	0	0	8/7	80	
88	OUT		8/7	80	
91.2			6/5	80	
(91.0 = WCL)					
PHOTOS					
104, 105 LOW 0/5					
106 R → L					
107, 108 LOW 0/5					

Location 503-1 (M) Date 7/20/00Project / Client 503-1 R/WMURRIL R. RAGAN 1A

STA	BS	IC	FL	ICCU
PM	4.44			
BM2			2.32 ✓	
WSE			5.45	
RWSE			5.44	
STA	DEP	VEL	SIN	1.15m
2.0 RWP				
2.6	0	0	RWE	
8	0.20	0	5/6	60
9.5	0.20	-0.01	6/2	60
11	1.00	0	2/6	60
12	1.40	0.16	8/2	80
13	1.50	0.00	8/2	80
14	1.80	0.02	8/2	80
1	2.05	0.22	7/6	80
16	1.85	0.62	8/2	80
17	1.50	0.84	8/2	80
18	1.55	0.34	8/2	80
19	1.80	0.03	8/2	80
20	1.60	0	8/2	80
21	1.60	0.12	8/2	80
22	1.70	0.36	8/2	80
23	1.50	0.11	8/2	80

Location _____ Date _____

Project / Client _____

STA	DEP	VEL	SIN	1.15m
24	1.40	0.2	8/2	80
25	1.25	0.31	8/2	80
26.5	1.20	0.01	8/2	80
28	0.60	0.01	8/2	80
29.5	0.50	0	8/2	80
31.0	0	0	8/2	80
33	OUT		8/2	80
35			8/2	80
37			8/2	80
39			8/2	80
41			8/2	80
43			7/8	60
44			7/2	80
(33.5 = LIVE)				
PHOTOS				
			109	LOOK W/S
			110	L → R
			111	LOOK S/S

Location MOUNTAIN R. NEAR CA Date 7/20/07Project / Client SC2 misc. engineering

STA	BS	HI	FS	Eleva	
BMI	4.24	104.24		100.00	(SC-2-6)
Bm2			3.35	100.90	
START BARREL / POOL WISE			5.73	- 9.375'	
MRI HADWIN @ SC HEAD			2.30	101.94	HAIR
WSE IN POOL / SC2-5			7.10	94.84	

HYDRAULIC CONTROL X-SECTION FOR
SC2-5 ~ 100 ft D/S

STA	BS	HI	FS	ELEV	
Bm4	2.92				HAIR
0 TOP OF R. BARREL			1.73		
2.4			4.03		
11			3.92		
20			3.92		
26			3.80		
30			3.60		
38			3.60		
42			3.70		
43.5			3.60		
48			1.80		

Location _____ Date _____

Project / Client _____

STA	BS	HI	FS	ELEV	
Bm4	2.92				REBAR
TP			3.45		
TP	3.59				
Bm1			2.47		N.M.L. ON R. BANK
WSE IN SC2-4 POOL			6.27		

HYDRAULIC CONTROL X-SECTION FOR SC2-4
~ 50 ft D/S

STA	BS	HI	FS	ELEV	
Bm1	3.74				
10 ft				6.54'	
6.0				7.67'	
12.0				7.70'	
18				7.61	
24				7.47	
26				7.58	
28				7.18	
30				6.90	
33				4.90	
Bm2				2.94	✓

Location SULPHUR R. LA

Date

8/21/07

Project / Client

SL-3 X5KLS

6

900 CFSStiff pipe = 10.25" @ 9:05 am

STA	BS	HE	FS	ELEV	DEPTH
Bm 1	4.14				
Bm 2			4.38	99.76	
LWSK			6.39		0.66'
RWSK			6.40	98.35	0.61'

PHOTOS

- #1 LOOKING N/S
2 X5 6 L→R
3 LOOKING N/S

SL-3 - TR 5 RUN / GROW (L)

STA	BS	HE	FS	ELEV	DEPTH
Bm 1	5.25	105.25			
Bm 2			3.43	101.82	
LWSK			6.60	99.72	1.07'
RWSK			6.26		0.72'
Bm 3			1.10		

PHOTOS

- #4 LOOKING N/S
5 X5 5 R→L
6 LOOKING N/S

Location

PROPHET SA CAL = 0.175 ✓

Date

Project / Client

SWOFFER 4099(F15)SL-3 - TR 52 - X5KLS @ 9:30 am
RUN / GROW

STA	BS	HE	FS	ELEV	DEPTH
2.0 RWP					
RWE 23			0	0	
24			0.50	0	
26.5			1.05	0.22	
29.0			1.50	0.49	
31.5			1.80	0.65	
34.0			1.90	0.45	
36.5			2.05	0.69	
39.0			2.20	0.87	
41.5			2.40	0.74	
44.0			2.05	0.84	
46.5			2.25	0.75	
49.0			2.30	0.97	
51.5			1.80	0.95	
54.0			2.20	1.15	
56.5			2.40	1.03	
59.0			2.50	1.09	
62			2.85	1.16 / 0.44	
64			2.55	1.13 / 0.45	
66			2.30	1.13	
68			2.30	0.94	
70			2.25	0.68	

Location Sutton R. LA Date 8/21/07
 Project / Client SC3-TR4 POD 900 ft

STA	BS	HI	FS	Elev	Dist
Bm1	4.53	104.53		100	0.00m
Bm3			4.72	99.81	0.00m
Bm4					
WSE			5.92	99.68	1.07
RWSE			5.68		0.83

PHOTOS

3 Looking N/S
 S R → L
 9 Looking W/S

SC3-TR3 PITCH

STA	BS	HI	FS	Elev	Dist
Bm3	3.11	102.92		99.81	0.00m
Bm4		98.40	4.52	98.40	0.00m
WSE			5.51	97.63	0.22
WSE @ STA 50			4.88		0.70
RWSE			4.77		0.33

PHOTOS

10 Looking N/S (TRAVEL DIR)
 S R → L
 11 Looking W/S

Location _____ Date _____
 Project / Client _____

STA	BS	HI	FS	Elev	Dist
Bm5	4.10				0.00m
Bm6				0.70	
WSE				6.64	0.70
RWSE				6.37	1.40

PHOTOS

TR1 TR2
 #16 - #13 Looking N/S
 (L → R) #17 - #14 R → L
 #18 - #15 Looking W/S

SC3-TR1 Run

STA	BS	HI	FS	Elev	Dist
Bm1	4.96				0.00m
Bm2				3.00	
WSE				5.00	
RWSE				5.00	

NOTE: SMALL TRICKLE
 INS HOLE FROM CATCH

5.00
 2.00
 3.00
 1.00
 0.00
 1.00
 2.00
 3.00
 4.00
 5.00
 6.00
 7.00
 8.00
 9.00
 10.00

Location SULLYAN R. 1A Date 8/21/07Project / Client SC2 - TR 6 900 cfsSTAFF 6066 - 23.88" Right Channel

@ 10:55 am

STA	BS	HS	FS	ELEV	DEFORM
Bm 1 W/S	4.29	104.29		100.00	
Bm 2 W/S			3.40		
LWSK		4.91	0.20	99.58	
LWSK		5.04	0.17		
		PROVISE			

8/19 - Looking N/S

8/20 - ~~R~~ R → L

RWP = 2.04 8/21 - Looking W/S

STA	DEP	VEL	STA	DEP	VEL
6.7	0	0	71	0.55	2.00
7	0.20	0	72	0.55	1.94
8	0.70	2.52	73	0.55	1.86
9	0.60	2.66	74	0.70	2.11
10	0.60	2.99	75	0.70	1.98
11	0.55	3.30	76	0.65	2.39
12	0.50	2.98	77	0.55	2.94
13	0.40	3.09	78	0.50	2.19
14	0.65	3.31	79	0.40	2.52
15	0.50	2.80	30	0.40	2.51
16	0.60	3.33	31	0.65	2.21
17	0.50	3.16	32	0.45	0.93
18	0.50	3.00	33	0.70	1.38
19	0.45	2.40	34	0.40	0.85
20	0.55	1.84			

Location _____ Date _____

Project / Client _____

STA	DEP	VEL
35	0.50	1.44
36	0.30	0.82
37	0.35	1.10
38	0.30	0.50
39	0.25	0.00
40	0.20	0.22
41	0.20	0.01
42	0.35	0.21
43	0.20	0.42
44	0.20	0.55
45	0.40	0.44
46	0.50	0.28
47	0.40	0.17
48 LWSK	0	0

Location SUNSHINE RIVER 1ADate 2/21/07Project / Client SC2-TR5 ROAD 7AROAD SWOTTER 4441

(ML 186)

STA	BS	HS	FS	EL (ft)	DEPTH
Bm 3	2.46 3.71	103.71			NAH
Bm 4			3.71 4.46	96.25	PARSP
LWSH			8.43	2.58	0.68
RWSH			8.37		0.62

2.0 = RWP

STA	DEP	VEL	STA	DEP	VEL
6.2 RWP	0	0	29.0	2.15	0.78
8	1.05	0	30.5	1.95	0.24
9.4	1.55	0.01	32.0	1.75	0.16
11	2.30	0	33.5	1.45	0.03
12.5	2.60	^{TOP} 0.0	35.0	1.05	0.03
14.0	2.60	0.16/0.42	36.5	0.30	0.01
15.5	2.70	0.13/0.61	37.3 WSP	0	0
17.0	2.85	0.35/0.53			
18.5	2.25	0.42/0.68			
20	2.70	0.52/0.71			
21.5	2.60	0.51/0.75	37.2 CORN D/S		
23	2.45	0.51	37.3 L → R		
24.5	2.35	0.58	37.4 LWSH 1/5		
26	2.30	0.63			
27.5	2.35	0.57			

Location

900 LFS

Date

Project / Client

SC2-TR4 ROAD

STA	BS	HS	FS	EL (ft)	DEPTH
Bm 1	3.60	103.60			
Bm 2			2.81		
LWSH			6.78	17.05	0.44
RWSH			6.62		0.27

STA	DEP	VEL	STA	DEP	VEL
8.2 RWP	0	0	26	3.45	0.69/1.28
10.0	0.40	-0.11	27	3.40	0.42/1.58
10.7	0.65	-0.46	28	3.30	0.41/1.00
12.0	1.10	-0.92	29	3.15	0.45/0.78
13	1.30	-0.85	30	3.05	0.23/0.58
14	1.35	-0.74	31	2.75	0.12/0.07
15	1.45	-0.44	32	2.40	0.31
16	1.90	-0.36	33	2.05	-0.60
17	2.25	-0.34	34	1.45	-0.59
18	2.45	-0.19	35	0.95	-0.31
19	2.90	0.13/0.14	36	0.30	-0.20
20	3.25	0.29/0.37	37.8 WSP	0	0
21	3.45	0.15/0.55			
22	3.65	0.44/1.27			
23	3.65	0.05/1.31	37.5 WSP		
24	3.70	1.03/1.64	37.6 WSP		
25	3.80	0.70/1.30	37.7 WSP		

Location

Sullivan River Ranch IA

Date

8/21/07

Project / Client

SC-1 - TR6

900 cfs

SWOFFER 4441

PROP A TA

STA	DEP	VEL	STA	PRF	VEL
1.0 LWP			22.2	0.55	1.08
9.4 LWE	0	0	22.5	0.55	1.11
10	0.1	0	23	0.55	0.74
11.5	0.25	0.01	23.5	0.6	0.47
13.0	0.60	0.71	24	0.4	0.01
13.5	0.75	0.63	24.5	0.4	0
14.0	0.75	1.20	25	0.5	-0.01
14.5	0.75	1.23	25.5	0.3	-0.01
15.5	0.65	1.59	26 RWE	0	0
16.0	0.70	1.42	31.7 RWP		
16.5	0.65	1.67			
17.0	0.65	1.40			
17.5	0.65	1.40			
18.0	0.65	1.22			
18.5	0.65	1.39			
19	0.70	1.37			
19.5	0.65	1.23			
20	0.65	1.19			
20.5	0.70	1.08			
21	0.65	1.21			
21.5	0.60	1.07			

Location

Sullivan River Ranch IA

Date

8/21/07

Project / Client

SC1 - TR4

900 cfs

SWOFFER 4441

PROP TA, Cat. 0186

Sta	DEP	VEL
1.0 LWP		
6.0 LWE	0	0
7.0	0.3	0
8.0	0.45	0
9.0	0.7	0.25
10.0	1.0	0.47
11.0	1.1	0.36
12.0	1.3	0.34
13.0	1.4	0.62
14.0	1.55	0.60
15.0	1.70	0.65
16.0	1.70	0.66
17.0	1.80	0.43
18	1.80	0.41
19	1.75	0.32
20	1.55	0.4
21	1.45	0.08
22	1.45	0.01
23	1.20	0.01
24	1.05	0
25	0.5	0
26 RWE	0	0

Location Swallow 4441 Prop 7A, Cat 126 Date _____

 Project / Client 900 cfs
Ranch 1A SC1 - TR1

Sta	Dep	Vel.			
5.5					
7.0 ^{LWE}	Ø	Ø	25.5	0.50	0.28
7.5	0.5	Ø	26.0	0.40	0.21
8.0	0.75	Ø	26.5	0.30	0.17
9	1.05	Ø	27.0	0.10	0.0
10	1.20	0.01	27.3	Ø	Ø RWE
11	1.30	0.01			
12	1.35	0.01			
13	1.55	0.08			
14	1.35	0.58			
15	1.30	0.62			
16	1.40	0.91			
17	1.35	0.59			
18	1.20	0.41			
19	1.05	0.42			
20	0.90	0.41			
21	0.70	0.49			
22	0.55	0.41			
23	0.45	0.43			
23.5	0.45	0.39			
24.0	0.50	0.41			
24.5	0.55	0.43			
25.0	0.55	0.34			

 Location Sultan River Date 8/21/07

 Project / Client Swallow 4441
Ranch 1A, SC1 - TR2 Prop 7A, Cat 0186

Sta	Dep	Vel.			
<u>ft</u>	<u>(ft)</u>	<u>f/s</u>			
7.2 LWE	Ø	Ø	19.0	1.25	0.56
8.0	0.55	Ø	19.5	1.20	0.42
9.0	0.90	Ø	20.0	0.80 ^(10%)	0.33
9.4	1.00	0.01	20.5	1.05	0.21
10.0	1.3	0.01	21.0	0.95	0.06
10.5	1.15	0.04	21.5	0.75	0.02
11.0	1.45	0.08	22.0	0.60	Ø
11.5	1.50	0.24	22.5	0.45	Ø
12.0	1.70	0.36	22.8	Ø	Ø RWE
12.5	1.60	0.49			
13.0	1.65	0.65			
13.5	1.55	0.73			
14.0	1.50	0.73			
14.5	1.40	0.79			
15.0	1.30	0.80			
15.5	1.30	0.85			
16.0	1.35	0.77			
16.5	1.40	0.72			
17.0	1.45	0.75			
17.5	1.40	0.71			
18.0	1.30	0.69			
18.5	1.25	0.56			

Location _____ Date _____

Project / Client _____

Location SC #3 TR 6 Date 8/23/07Project / Client Sho PodAug 23, 2007

		In	Out
	Time	9:00	5:30
SC#3	S.G	9.1/8	9.1/8
SC#2	S.G	21.125 7/8	21 7/8
Crew: N. Romero			
M. Gagner			
Equipment: Sniffer 4099			
prop: 5A			
cal = 0175			
Conditions: no precip. in past 24 hours			
flow conditions appear steady, water clarity is good			

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Location SC #3 TR-6 Date 8/23

Project / Client

WSE

STA	BS	HI	FS	Eleva	Rod
BM-1	2.76			100.00	
		102.76			
BM-2			2.95	99.76	
HP-1 (TR-1 mainstem)			2.97	99.79	
u/s SC #3 TR-6 (35')			5.56		1.50
RWS			5.02	98.22	.53
MWS			4.57	98.43	.29
LWS			4.85	98.32	0.46
			(4.31)		
u/s SC #3 TR-3 ~ 30'			5.61		0.54
TR-1 HP	3.29				
TR-1 RWS (looking u/s)			5.83		.46
MWS "			7.44		1.54
Photo log					
		058	looking ↓ from cap/lva		
		059	RT → LT		
		060	staff gage		
		061	looking u/s		

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Location SC #3 TR-5

Date 8/23/07

Project / Client Sno Pod

Q-measurement

RWP	Depth	Vel	STA	Depth	Vel
RWE: 23.1	0.0	0.0	74.0	1.67	.51
24	0.25	0.04	76.0	1.25	.36
26.5	0.90	0.06	78.0	1.15	.05
29	1.35	0.24	LWE: 79.6	0.0	0.0
31.5	1.25	0.27			
34.0	1.60	0.32			
36.5	1.70	0.28			
39.0	1.90	0.39			
41.5	2.0	0.61			
44.0	1.90	0.64			
46.5	2.00	0.60			
49.0	2.00	0.56			
51.5	2.08	0.80			
54.0	2.66	0.81			
56.0	2.07	0.87	57.1		
58.0	2.23	0.79			
60.0	2.42	0.96			
62.0	2.63	0.93			
64.0	2.33	0.58			
66.0	2.17	0.75			
68	2.14	0.81			
70.0	2.09	0.60			
72	1.70	0.64			

94 Location SC#3 TR-5 Date 8/23/07

Project / Client _____

Level loop $\frac{1}{s}$ WSE

STA	BS	HT	FS	Eleva	El Rod
BM-2	3.47			101.84	✓
		103.47	105.31		
BM-1			5.31	100.00	
LWS			6.37 5.77	99.58	.60
RWS			6.35 5.78	99.53	.57
v/s			6.28		0.52
d/s			6.33		0.54

Photo Log

# 062	u/s
063	R \rightarrow L
064	d/s
065	L \rightarrow R

Location SC#3 TR-4 Date 8/23/02 95

Project / Client _____

WSE - ϵ Pin Check

STA	BS	HI	IS	Elev	Ra
(TR-5) BM-1	4.63			100.00	
(TR-4) BM-3		104.63			
TR-4			4.82	99.81	
RWS			5.50 5.13	99.50	37
d/s ~ 40'			5.38		0.0
LWS			5.62 5.11	99.52	51
066	→	160m	d/s		
067	→	11	Rt → Lt		
68	→	"	u/s		

96

Location SC#3 TR-3 Date 8/23/07

Project / Client

Survey Marker Check & WSE

	STA	BS	HI	FS	Eleva	Red
1	BM-3	3.13			99.81	
			102.94			
1	TR-3 BM-4			4.50	98.44	
L	RWS			4.74 (4.57)	98.35	0.16
R	d/s ~ 35'			5.68	97.26	
u	max WSE (flame for in bank)			5.50 5.29	97.65	.21
d	LWS			5.48	97.46	0.0

photo log

069 - looking d/s

070 - Rt → Lt

071 - looking u/s

* 072 - Lt → Rt

Location SC#3 TR-2Date 8/23/07

Project / Client

TR-2

	STA	BS	HI	FS	Eleva	Red
BM-4 (TR-3)		3.68			98.44	
			101.82			
BM-5 (TR-2)				3.73	98.09	
RWS				4.81	97.01	
d/s ~ 40'				5.16		.27
Bm-6				0.34	101.48	
LWS				4.77	97.05	

photo log

* 072 - u/s from TR-2

074 - Rt → Lt

75 - u/s from below

Lt → Rt

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Location SC#3 TR-1Date 8/23/07Project / Client Sno PodPin Check i WSE

	STA	BS	HI	FS	Eleva	Rad
I	BM-1	4.80			100.00	d/s mark
			104.80			
I	BM-2			3.73	101.07	v/s mark
L	LWS			5.10		0.0
R	WSE v/s ~ 40'			4.30		0.0
v	RWS			5.63		0.53
d	WSE d/s ~ 40'			5.36		0.0

Photo Log

#

12

077 → Lt → Rt

078 → d/s

079 → RA → LA

080 v/s

Location SC#2 TR-6Date 8/23/07 99Project / Client Sno PodPin Check i WSE

	STA	BS	HI	FS	Eleva	Rad
	BM-1	4.30	104.30		100.00	v/s mark
						100.70
	BM-2			3.40	100.90	2
	LWS			4.86		
	d/s ~ 25'			5.78		0.0
	RWS			4.97		
	MWS			4.92		
	TR-5			7.14	2.35	
	HP-2					
	v/s ~ 45'			4.97		0.55
	WSE			2.77	7.14	2.17
	TR-5 (right back)					
	SG = 21 7/8					
	Photo Log #081				SC#2	S.G
	#082				Lt → Rt	
	#083				looking v/s	
	084				Rt → Lt	
	085				d/s from confluence	

Q - measurement

STA	Depth	Vel	STA	Depth	Vel
RWB-6.8	0.0	0.0	29	0.25	0.94
7	0.05	.01	30	0.28	1.79
8	0.47	2.31	31	0.48	1.50
9	0.45	2.30	32	0.30	1.70
10	0.43	2.62	33	0.40	1.42
11	0.40	2.62	34	0.29	.17 $\frac{1}{2}$ s
12	0.38	2.35	35	0.30	.78
13	0.46	2.32	36	.17	.78
14	0.49	2.32	37	.20	.68
15	0.38	2.09	38	.15	.17
16	0.42	1.78	39	.35	—
17	0.42	2.10	40	.05	—
18	0.37	1.80	41	.05	—
19	0.28	2.82	42	.15	—
20	0.40	1.45	43	.05	—
21	0.42	1.26	44	.85	—
22	0.40	1.23	45	.27	0.09
23	0.39	1.19	46	.35	.13
24	.50	1.33	47	.20	.05
25	.52	1.15	47.7	0.0	0.0
26	.52	1.99			
27	.42	.65			
28	.30	0.06 $\frac{1}{2}$ s			

Pin Eleva. Check E WSE

STA	BS	HI	FS	Eleva	Red
BM-3	3.9			100.00	
		103.91			
BM-4			7.67	96.24	
RWS			8.93 (8.13)		.80
LWS			8.13		0.0
$\frac{1}{2}$ s ~ 25'			9.82		1.68
$\frac{1}{2}$ s ~ 30'			9.53		1.41

Photo Log

086 Lt → Rt
 # 087 Rt → Lt
 # 088 no good
 # 089 d/s
 090 ~~a/s~~

Location SC#2 TR-5 Date 8/23/07

Project / Client

Q-measurement

STA	Depth	Vel	STA	Depth	Vel
RWE-6.1	8	0			
8	0.97	0.05			
9.4	1.47	0.05			
11	2.10	0.05			
12.5	2.30	0.05			
14.0	2.30	0.15			
15.5	2.55	0.11/0.27			
17.0	2.60	0.32/0.06			
18.5	2.62	0.25/0.24			
20.0	2.50	0.45/0.25			
21.5	2.46	0.45			
23.0	2.22	0.43			
24.5	2.17	0.31			
26.0	2.13	0.33			
27.5	2.22	0.39			
29.0	1.98	0.30			
30.5	1.76	0.12			
32.0	1.60	0.10			
33.5	1.27	0.15			
35.0	0.90	0.08			
36.5	0.16	0.05			
36.9 LWE	0	0			

Location SC#2 TR-4 Date 8/23/07

Project / Client

Pin Eleva. Check & WSE

STA	BS	HI	IS	Eleva	Rel
BM-1	3.85			100.00	
		103.85			
BM-2			3.06	100.79	
d/s "25"			6.97		0.0
LWS			6.89		0.0
RWS			7.55		
			(6.90)	96.95	-65
v/s "25"			6.89		

103.85
6.00
96.95

Photo Log

- # 090 - Lt → Rt
 091 - looking v/s
 092 - Rt → Lt
 093 - looking d/s

Q-measurement

STA	Depth	Vel	STA	Depth	Vel
9.5	0.0	0.0	32	2.11	1.02
10.0	.12	-.05	33	1.80	1.27
10.7	.35	-.05	34	1.10	0.94
12.0	.75	-.36	35	0.50	0.11
13	0.90	-.40	36.2	0.0	0.0
14	1.00	-.39			
15	1.16	-.39			
16	1.67	-.17			
17	1.95	-.31			
18	2.17	-.25			
19	2.51	-.20			
20	2.85	-.12			
21	3.13	-.05			
22	3.30	-.14			
23	3.46	-.06			
24	3.48	-.02			
25	3.53	-.18			
26	3.05	-.19			
27	3.10	-.08			
28	3.05	-.22			
29	2.85	-.30			
30	2.80	-.48			
31	2.45	-.60			
		-.59			
		-.66			
		-.76			
		-.68			
		-.76			
		-.85			

end of negative vol
5° angle

Pin Eleva. Check & WSE

STA	BS	HI	FS	Eleva	Rad
					2
See Side Channel book 2 to 2					

see
side Channel
book 2 to 2

Sultan River
Instream Flow Study



U.S. DEPARTMENT OF AGRICULTURE
NATIONAL AGRICULTURAL
EXPERIMENT STATION
ENVIRONMENTAL
No. 550

Side Channel 1 of 2
Jackson Project

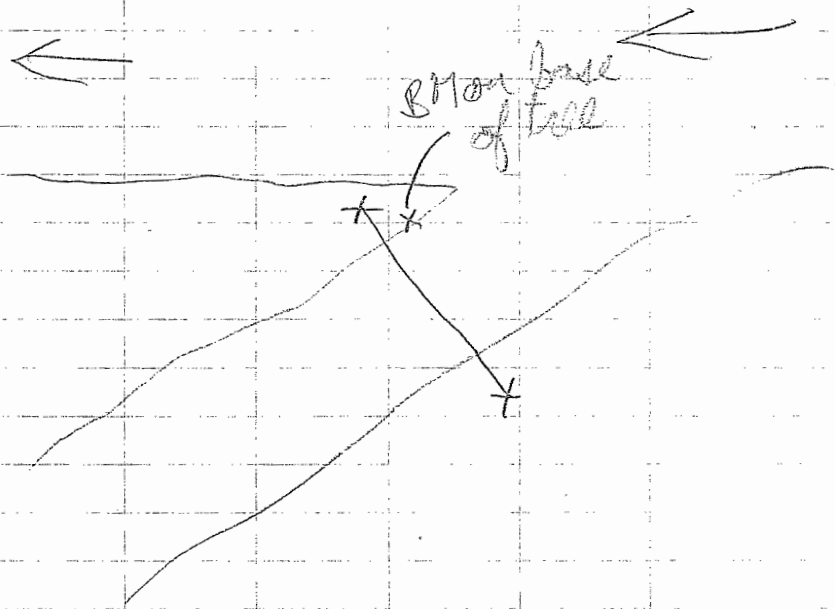
1628.04

1 of 2

2

Location Siltan River Date 7/17/07

Project / Client _____

Reach 1A, SC1, TR6
Hydraulic Control

3

Location _____ Date _____

Project / Client _____

SC#1 TR-6 Bed Profile

Benchmark Red Rod #	Red Rod #	BM (ft)
2.44		
	2.60	1.0
	2.65	2.0
	3.05	3.0
	3.61	4.0
	4.17	5.0
	4.75	6.0
	5.67	7.0
	6.05	8.0
	6.42	9.0
	6.64	10.0
	6.80	11.0
	7.00	12.0
	7.07	13.0
	7.10	14.0
	7.11	15.0
	7.21	16.0
	7.19	17.0
	6.97	18.0
	7.16	19.0

Location _____

Date 7/17/07

Project / Client _____

SC #1 TR-6

STA	DDM	%DDM	Cover
1.0	1	100	2
2.0	1	100	2
3.0	1	100	2
4.0	1	100	2
5.0	1	100	2
6.0	1	100	2
7.0	2	100	2
8.0	2	100	2
9.0	2	100	2
10.0	2.4	70	2
11.0	4.2	55	2
12.0	4.3	50	2
13.0	5.4	60	2
14.0	4.3	70	2
15.0	1.3	65	2
16.0	4.4	55	2
17.0	8.6	60	2
18.0	5.7	65	2

continue on pg 5 for right column

Location _____

Date 7/17/07

Project / Client _____

SC #1 TR-6

Sub	%	Cover	rod ready	STA ft. in
4.5	70	2	7.08	20
4.5	70	2	7.05	21
5.4	60	2	6.91	22
4.3	55	2	6.95	23
4.3	55	2	6.91	24
4.5	80	2	7.04	25
2.4	90	2	6.72	26
1.8	90	2	5.55	27
1	100	2	5.13	28
1	100	2	4.73	29
1	100	2	4.33	30
1	100	2	3.95	31
1	100	2	3.85	31.6

2.95 RWP

2.44 BM

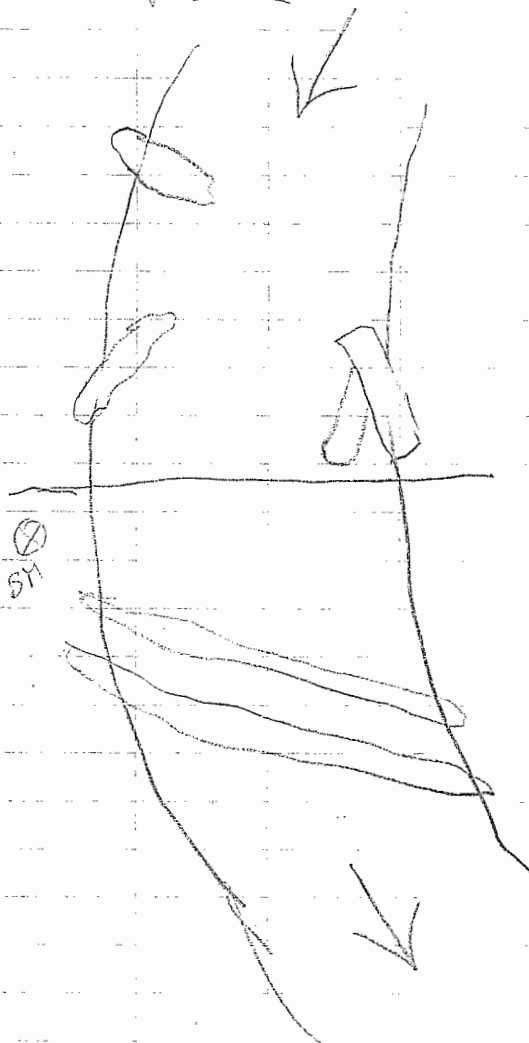
Location _____

Date

7/17/07

Project / Client _____

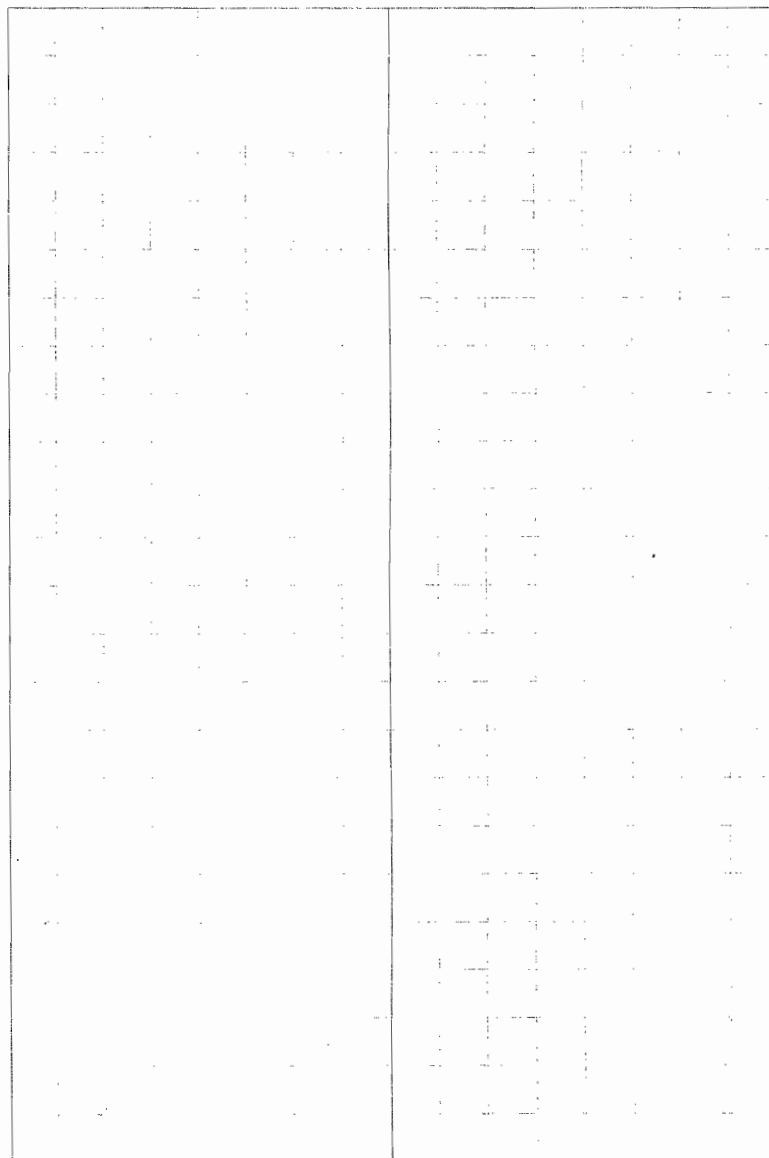
Reach 1A, SCI, TR 5
Pool



Location _____

Date _____

Project / Client _____



Location _____

Date

7/17/07

Project / Client _____

SC#1 TR-5

PSSTA

7.58

19.0

7.72

20.0

7.85

21.0

7.86

22.0

7.42

23.0

6.83

24.0

6.33

25.0

3.95

26.0

3.63

27.0

3.86

28.0

2.92

RWP

35

5.57

Location _____

Date _____

Project / Client _____

Sub%Cover

1.5

60

81

40

7.1

70

2

1.4

70

2

1.3

80

2

1

100

2

1

100

2

1

100

2

1

100

2

1

100

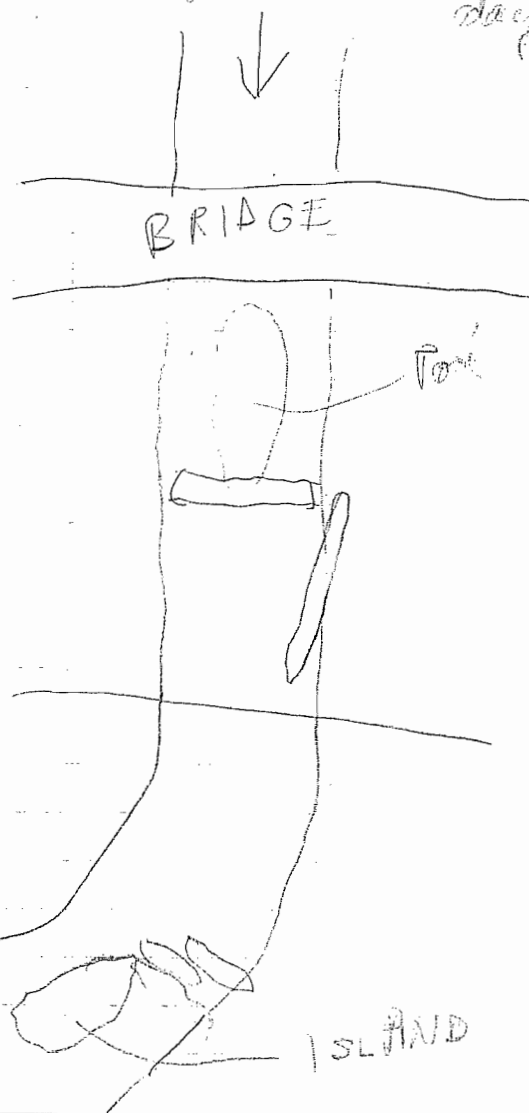
2

Location _____

Date 7/17/07

Project / Client _____

REACH 1A, SC1, TR4
 Run / Riffle - TBD on high flow
 day



BRIDGE

Pool

ISLAND

Location _____

Date _____

Project / Client _____

Location _____

Date

7/17/07

Project / Client

SC#1 TR-4

2.72 ^{Benchmark}
Rob ReadingRob Reading
Level BM #4

2.56 1.0

2.78 2.0

3.18 3.0

3.53 4.0

3.81 5.0

4.32 6.0

4.57 7.0

4.77 8.0

4.94 9.0

5.29 10.0

5.38 11.0

5.58 12.0

5.71 13.0

5.87 14.0

5.97 15.0

5.98 16.0

6.12 17.0

6.11 18.0

Location _____

Date _____

Project / Client _____

Don Size Don'ts Core
code

2 70 2

2 70 2

2 70 2

1 70 2

1 90 2

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

1 90

1 70

1 60

1 60

4 60

4 60

3 65

3 70

Location _____ Date _____

Project / Client SC#1 TR-4

FS	STA
6.02	17.0
5.78	20.0
5.76	21.0
5.70	22.0
5.42	23.0

5.14	24.0
4.66	25.0
4.19	26.0
3.80	27.0
3.56	28.0

3.32	29.0
2.85	30.0
2.66	31.0
2.49	32.0
2.39	33.0
2.35	34.0
2.01	RWP

~~100.4~~
100.76

Location _____ Date _____

Project / Client _____

Sub	%	Cover
64	70	
15	65	
15	80	
1	100	2
1	100	2
1	100	2
1	100	2
1	100	2
1	100	2
12	85	2
12	55	2
21	55	2
21	65	2
21	65	2
21	65	2
21	65	2

Location _____ Date _____

Project / Client _____

Roach 1A, SCI, TR3
Riffle

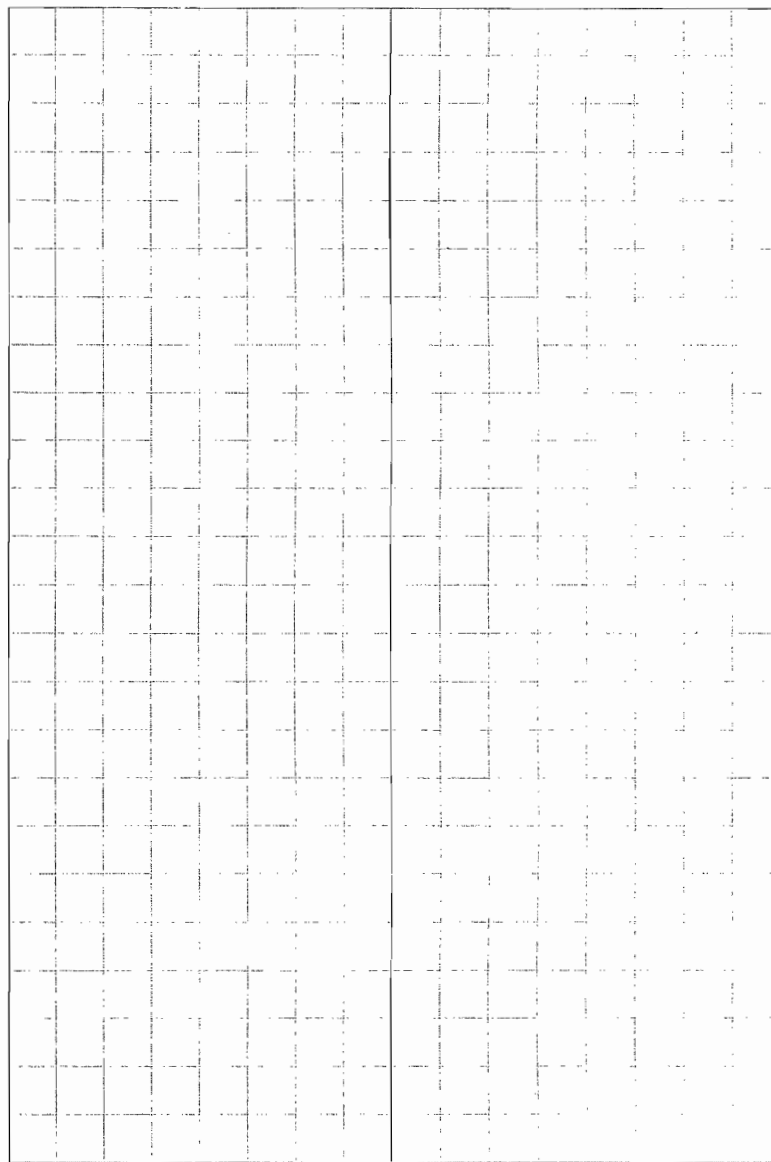
Canary

Q
C.V.



Location _____ Date _____

Project / Client _____



Location _____ Date _____

Project / Client _____

1.2A

BM

2.75 1.0

2.48 2.0

2.62 3.0

2.80 4.0

3.08 5.0

3.60 6.0

4.41 7.0

4.79 8.0

4.78 9.0

4.73 10.0

4.73 11.0

5.08 12.0

5.04 13.0

4.99 14.0

5.12 15.0

5.15 16.0

4.90 17.0

5.31 18.0

Location _____ Date _____

Project / Client _____

12 80 2

12 80 2

12 80 2

12 80 2

12 60 2

12 60 2

21 70 2

21 90 2

21 90 2

32 60 2

32 60 2

64 70 2

64 60 2

23 90 2

23 90

74 60

64 70

73 80

Project / Client

520 19.0

5.32	20.0
------	------

5.29 21.0

5.05 22.0

4-25-23-0

474 29.0

4.39 25.0

4.08 76.0

3.84 - 27.0

3.61 28.0

330 290

3 10 30.0

2.90 - 31.0

285 32.0

280 330

2.72 39.0

2.70 3A.6

2.17 RWP

Location

Dale

Project / Client

73 90

32 60

5460

63 65

20

1270

100

1	100
2	100

100

100

1100

1	100
---	-----

1000

100

1-100

1100

17100

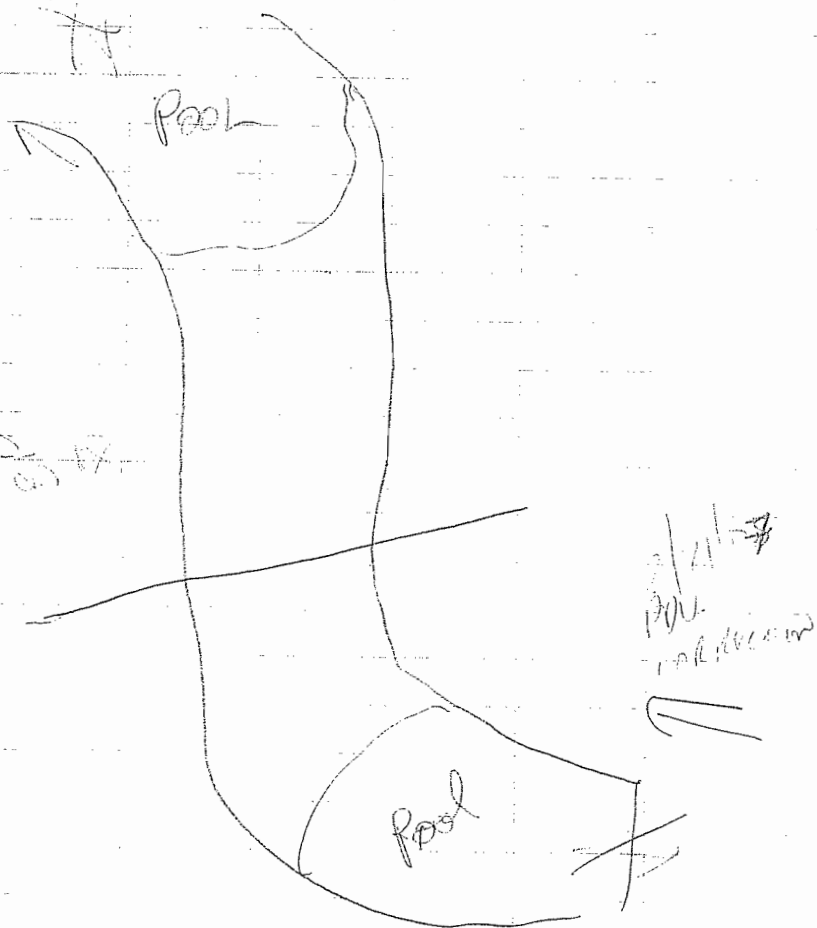
7 inch log parallel
6 ft

Location _____ Date _____

Project / Client _____

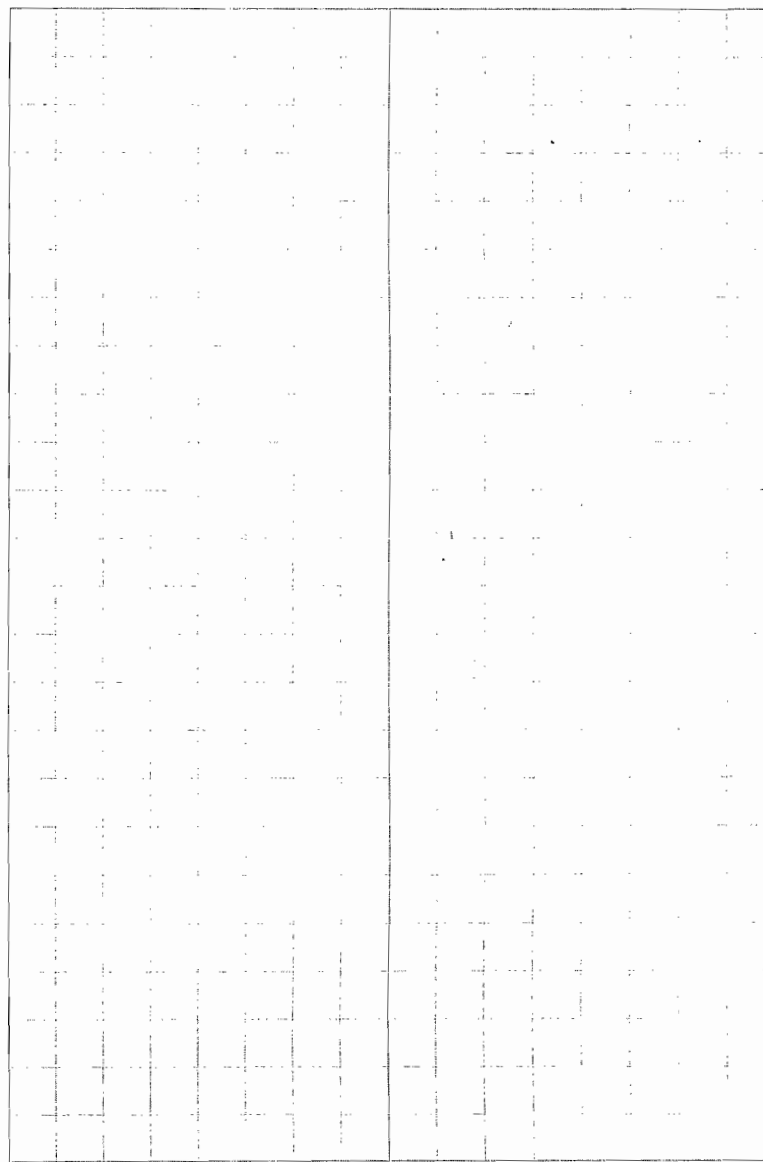
Reach 1A, SC1, FR2

Run



Location _____ Date _____

Project / Client _____



Location _____ Date _____

Project / Client _____

1.70

BM

3.18 1.0

3.54 2.0

3.99 3.0

4.29 4.0

4.53 5.0

4.71 6.0

4.90 7.0

5.42 8.0

5.81 9.0

6.28 10.0

6.43 11.0

6.57 12.0

6.61 13.0

6.90 14.0

6.26 15.0

6.32 16.0

6.40 17.0

6.30 18.0

Location _____ Date _____

Project / Client _____

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

1 100 2

16 65 2

1 70 2

67 70 2

61 80 2

21 70 2

2 100 2

2 100 2

2 100 2

2 100 2

2 100 2

Location _____ Date _____

Project / Client _____

6.17 19.0

6.18 20.0

6.01 21.0

5.58 22.0

4.68 23.0

4.59 24.0

4.45 25.0

4.22 26.0

4.10 27.0

4.10 28.0

4.26 29.0

4.21 29.5

3.78 RWP

Location _____ Date _____

Project / Client _____

21 60

1 60

1 60

2 60

2 70

1 100

1 100 short grass

1 100 "

1 100 "

1 100 "

1 100 "

1 100 "

Location _____ Date _____

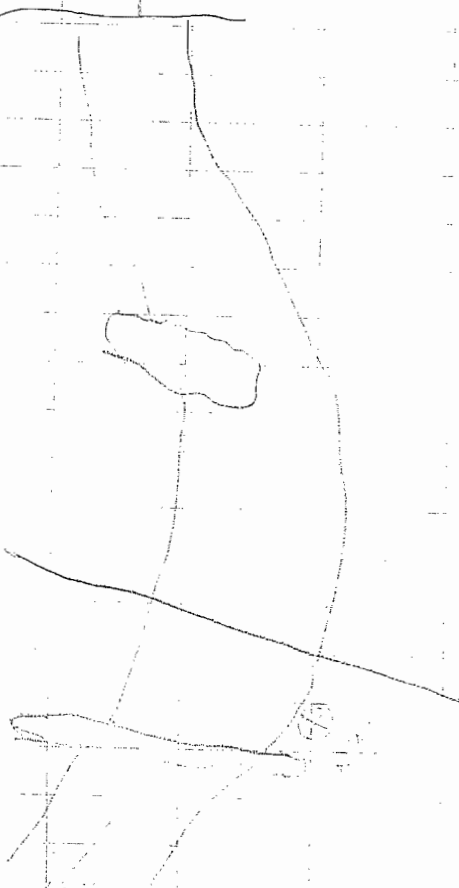
Project / Client _____

Reach 1A, SCI, TRI

Pool

↓

Bridge



Location _____ Date _____

Project / Client _____

4.39	BH			
3.2	1.0	1	100	2
3.52	3.0	1	100	2
4.38	5.0	1	100	2
8.23	7.0	54	70	2
8.73	8.0	65	70	2
9.02	9.0	54	80	
9.25	10.0	45	60	
9.19	9.0	45	80	
9.38	11.0	54	60	
9.55	12.0	54	60	
9.31	14.0	56	60	
9.26	15.0	56	60	
9.34	16.0	54	70	
9.38	17.0	54	60	
9.20	18.0	54	55	

Location _____ Date _____

Project / Client _____

9.03 19.0 52 60

8.90 20.0 34 60

8.64 21.0 32 70

8.49 22.0 23 90

8.33 23.0 2 100

8.42 24.0 2 100

8.48 25.0 2 100 2

8.34 26.0 2 100 2

8.01 27.0 2 100 2

7.84 28.0 2 100 2

7.66 29.0 2 100 2

7.49 30.0 1 100 2

6.53 32.0 1 100 2

5.32 34.0 1 100 2

4.34 36.0 1 100 2

3.84 39.3 1 100 2

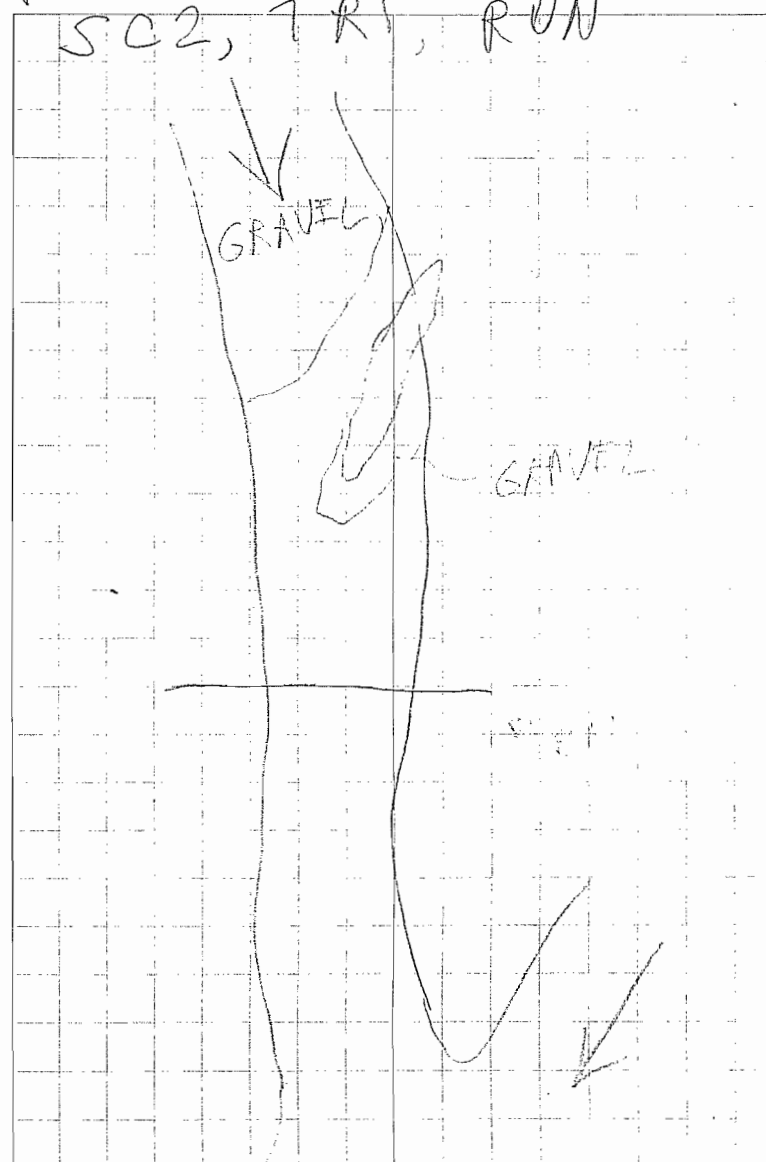
3.32 RWP

Location _____ Date _____

Project / Client _____

REACH 1A

SC2, TR1, RUN



SC# 2 TR-1

2.67		BM		
4.28	1.0	2	100	2
4.58	2.5	2	100	2
5.51	4.0	2	100	2
8.84	5.5	43	60	2
8.81	7.0	54	65	2
8.81	8.5	56	55	2
8.88	10.0	54	70	2
9.01	11.5	54	70	X
9.06	13.0	54	70	X
9.07	14.5	54	80	
9.12	16.0	52	65	
9.18	17.5	54	70	
9.02	19.0	45	60	
9.03	20.5	54	70	
8.95	22.0	54	70	

8.98	23.5	54	70
8.95	25.0	45	60
8.97	26.5	45	70
9.06	28.0	45	70
8.83	29.5	58	55
8.78	31.0	45	70
8.85	32.5	54	60
8.90	34.0	45	70
9.02	35.5	48	55
8.95	37.0	72	60
8.72	38.5	72	70
8.16	40.0	1	100 2
7.75	41.5	1	100 2
7.39	43.0	1	100 2
7.10	44.5	1	100 2
6.82	46.0	1	100 2
6.53	47.5	1	100 2

Location _____ Date _____

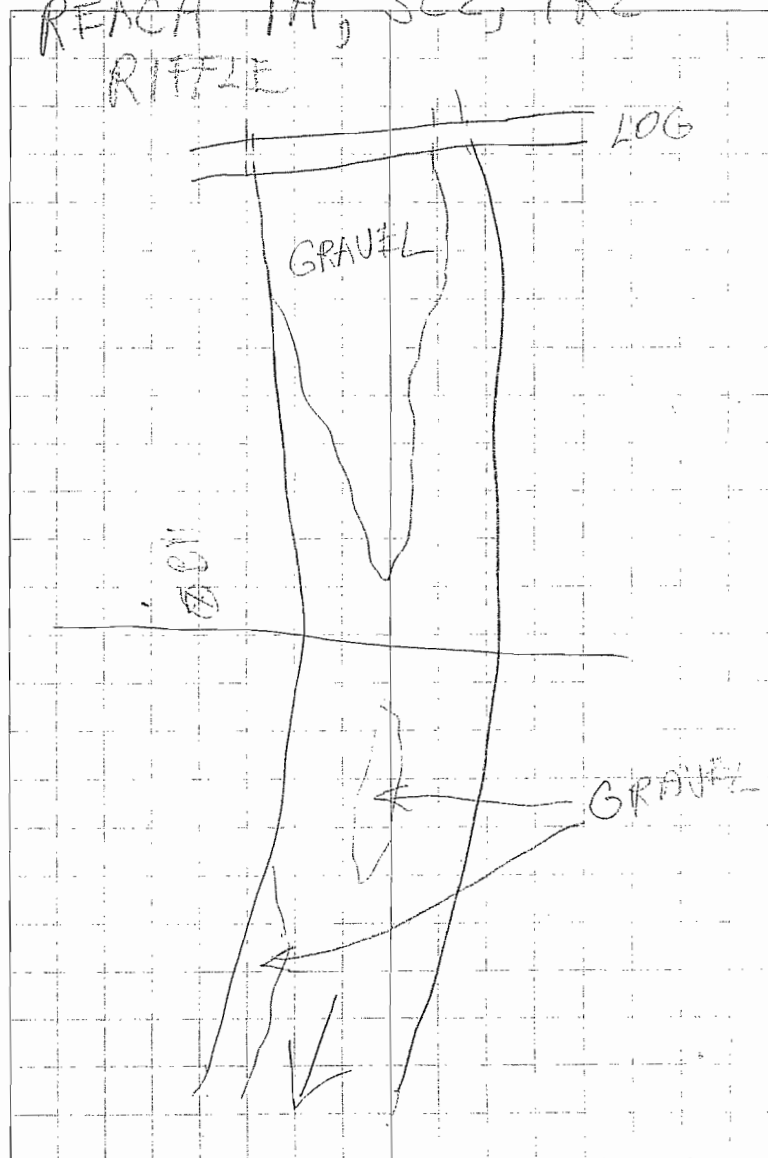
Project / Client _____

623	49.0	1	100	2
6.02	50.5	1	100	2
5.56	52.0	1	100	2
4.70	53.7	1	100	2
1.98	RWP			

Location _____ Date _____

Project / Client _____

REACH 1A, SC2, TR2
RITZLE



Location S. Han R.Date 7/17/07

Project / Client

SC#2 TR-2

2.92	BM			
5.39	1.0	23	60	2
6.03	3.0	21	60	
6.77	5.0	16	80	
7.23	7.0	14	55	
7.63	9.0	14	95	
7.71	11.0	1	100	
8.23	12.5	1	100	
8.27	14.0	21	90	
8.18	13.5	23	60	
8.16	17.0	32	80	
8.12	18.5	34	55	
8.06	20.0	45	80	
8.22	21.5	43	70	
8.18	23.0	45	70	
8.24	24.5	54	55	
8.26	26.0	45	80	
8.20	27.5	45	60	
8.02	29.0	54	60	
8.10	30.5	46	55	

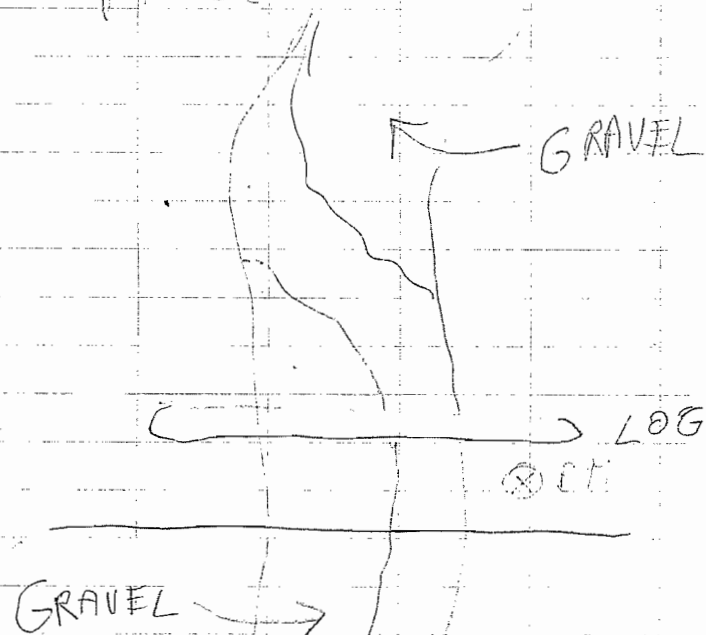
Location

Date

Project / Client

8.12	32.0	65	55	
8.15	33.5	45	60	
8.16	35.0	54	55	
8.18	36.5	54	60	
8.15	38.0	54	70	
8.06	39.5	54	80	
7.91	41.0	54	55	
7.12	43.0	51	55	short
8.83	45.0	1	100	grass
6.72	47.0	1	100	2
6.60	49.0	1	100	2
6.47	51.0	1	100	2
6.35	52.0	1	100	2
5.76	53.0	1	100	2
5.62	54.0	1	60	2
5.49	55.0	1	100	2
4.79	56.0	1	100	2
4.52	57.0	1	100	2
4.12	RWP			

REACH 1A, SCL 2, TRS
PITFLE



4.64 B.M.

4.90	1.0	1	100	2
5.39	3.0	1	100	2
6.45	5.0	1	100	2
9.49	7.0	1	100	2
9.77	8.5	32	60	2
9.81	10.0	43	60	2
9.84	11.5	43	60	
10.09	13.0	43	60	
10.21	14.5	45	70	
10.45	16.0	45	60	
10.64	17.5	54	60	
10.71	19.0	54	70	
10.74	20.5	54	70	
10.79	22.0	54	60	
10.70	23.5	54	70	
10.49	25.0	54	60	
10.39	26.5	45	60	
10.29	28.0	45	60	
10.09	29.5	54	60	
10.17	31.0	45	60	

Location _____ Date _____

Project / Client _____

10.04	32.5	45	60	
10.06	34.0	54	70	
10.11	35.5	54	70	
10.35	37.0	54	60	
9.82	39.0	14	80	2
9.44	41.0	1	100	2
3.57	43.0	1	100	2
5.75	45.0	1	100	2
5.05	47.0	1	100	2
7.2	49.0	1	100	2
5.7	51.0	1	100	2
5.7	53.0	1	100	2
5.7	55.0	1	100	2

Location _____ Date 7/10/67

Project / Client _____

Road 1A - 24, 7 RF

Swoftlec #4441
C-12

Time	Lat	Long	Comments
13.5	0	0	
14.5	0.10	1.01	Sample
16.0	0.21	1.29	Sample
17.5	0.10	1.50	Sample
17.2	1.20	2.72	
20.5	1.15	3.79	
17.5	1.15	3.79	
15	0.10	1.01	Sample
15.5	1.20	2.72	Sample
16.5	1.15	3.79	Sample
18	1.15	3.79	Sample
2.5	1.15	3.79	Sample
8	1.15	3.79	Sample
9	1.15	3.79	Sample
10	1.15	3.79	Sample
11	1.15	3.79	Sample
12	1.15	3.79	Sample
13	1.15	3.79	Sample
14	1.15	3.79	Sample
15	1.15	3.79	Sample
16	1.15	3.79	Sample
17	1.15	3.79	Sample
18	1.15	3.79	Sample
19	1.15	3.79	Sample
20	1.15	3.79	Sample
21	1.15	3.79	Sample
22	1.15	3.79	Sample
23	1.15	3.79	Sample
24	1.15	3.79	Sample
25	1.15	3.79	Sample
26	1.15	3.79	Sample
27	1.15	3.79	Sample
28	1.15	3.79	Sample
29	1.15	3.79	Sample
30	1.15	3.79	Sample

Location _____ Date _____

Project / Client _____

Reach 1A, SC1, TR5 Marsh McBiney

<u>S</u>	<u>D</u>	<u>V</u>	<u>Comments</u>
9.3			LWE
10.0	0.20	-0.04	upstream log velocity break
11.0	0.35	-0.15	
12.0	0.50	-0.15	
13.0	0.70	-0.21	
14.0	0.75	-0.14	
15.0	0.90	-0.10	
16.0	1.20	-0.14	
17.0	1.30	-0.05	
18.0	1.45	0.18	
19.0	1.70	0.17	
20.0	1.70	0.17	
21.0	1.80	0.06	
22.0	1.90	-0.02	
23.0	1.60	-0.04	
24.0	0.95	-0.06	
25.0	0.90	-0.06	
25.1	0.90	-0.06	RWE (30' undercut past RWE)

Location _____ Date _____

Project / Client _____

Reach 1A, SC1, TR4 Marsh McBiney

<u>S</u>	<u>D</u>	<u>V</u>	<u>Comments</u>
8.40	0	0	LWE
9.00	0.15	-0.13	
10.0	0.60	-0.10	
11.0	0.70	-0.09	
12.0	0.90	-0.04	
13.0	0.95	0.01	
14.0	1.10	0.0	
15.0	1.20	0.03	
16.0	1.30	0.05	
17.0	1.40	0.04	
18.0	1.40	0.04	
19.0	1.30	0.05	
20.0	1.05	-0.01	
21.0	1.0	-0.01	
22.0	1.0	-0.01	
23.0	0.80	-0.04	
24.0	0.50	-0.04	
25.0	0.10	-0.09	
25.1	0	0	RWE

Location _____ Date _____

Project / Client _____

Reach 1A, SC1, TR3 Marsh McBirney

S	D	V	Comments
11.5	0	0	LWE
12.0	0.20	0.37	5° A
13.0	0.20	0.17	
12.5	0.15	0.40	5° A
13.5	0.10	0.51	
14.0	0.10	-0.30	in aquatic veg
14.5	0.10	-0.04	in aquatic veg
15.0	0.15	0.07	20° A after edge aquat. veg
15.5	0.25	0.50	5° A
16	0.02	0.40	top of rock
16.5	0.25	0.81	
17.0	0.20	0.84	
17.5	0.03	0.40	
18.0	0.40	0.45	
18.5	-0.30	0	
19.0	0.15	0.36	
19.5	0.20	-0.10	up stream vel. break
20.0	0.40	0.37	
20.5	0.37	0.54	
21.0	0.40	0.50	
21.5	0.40	-0.05	
22.0	0.10	0.13	
22.5	0.01	0	

Location _____ Date _____

Project / Client _____

Reach 1A, SC1, TR2 Marsh McBirney

S	D	V	Comments
9.4	0	0	LWE
10.0	0.1	-0.05	
10.5	0.4	0.13	
11.0	0.2	0.12	on rock
11.5	0.5	0.15	
12.0	0.5	0.10	
12.5	0.7	0.18	
13.0	0.7	0.16	
13.5	0.6	0.26	
14.0	0.5	0.23	
14.5	0.35	0.06	
15.0	0.30	0.25	
15.5	0.40	0.29	
16.0	0.40	0.31	
16.5	0.45	0.29	
17.0	0.50	0.20	
17.5	0.40	0.19	
18.0	0.35	0.12	
18.5	0.30	0.14	
19.0	0.20	0.3	
19.5	0.15	0.10	
20.0	0.10	-0.03	surrounded by wood
20.5	0.10	0.02	

Location _____ Date _____

Project / Client _____

<u>S</u>	<u>d</u>	<u>V</u>	<u>Comments</u>
21	.01	0.06	
21.3	Ø	Ø	RWE

Location _____ Date _____

Project / Client _____

Reach 1A, SCI, TRI Marsh McBirney

<u>S</u>	<u>D</u>	<u>V</u>	<u>Comments</u>
7.5	Ø	Ø	LWE
8.0	0.20	-0.05	
9.0	0.60	-0.02	
10.0	0.70	0.04	
11.0	0.80	0.11	
12.0	1.0	0.09	
13.0	1.15	0.11	
14.0	0.95	0.06	
15.0	0.90	0.02	
16.0	1.0	0.02	
17.0	0.90	0.02	
18.0	0.80	0.01	
19.0	0.70	0.01	
20.0	0.55	-0.04	
21.0	0.30	-0.06	
22.0	0.02	-0.08	
23.0	Ø	Ø	Sand bar
23.5	.01	Ø	
24.0	.1	Ø	
24.5	.1	Ø	
25	.15	-0.10	
25.5	.10	Ø	
26.1	Ø	Ø	RWE

Ø is
left side
ds,
the off
1 ft.

50

Location

Date

Project / Client

Reach 1A, Mainstem T1

07/10/07

S	D	V	Comments
10.2	Ø	Ø	LWE
14	1.70	0.70	
20	1.40	1.40/1.15	
30	1.70	1.95/1.16	
32	2.40	1.75	
46	2.05	2.08	
54	1.80	1.96	
62	1.60	1.91	
70	1.30	1.66	
78	1.20	1.61	
86	1.10	1.52	
94	1.00	1.50	
102	1.00	1.31	
110	1.00	1.38	
118	1.40	1.34	
126	1.50	1.48	
134	1.80	1.66	
142	1.80	1.62	
150	1.90	1.42	
158	1.75	1.46	
166	1.10	0.99	
172.5	0.70	0.51	0.8' undercut RWE

Location

Date

Project / Client

Reach 1A, SC2 TRI

S	D	V	Comments
5.1	0.1	Ø	LWE
5.5	0.3	-0.1	
7.0	0.3	Ø	
8.5	0.3	Ø	
10.0	0.3	0.01	REDONE
11.5	0.45	Ø	W/ SWATTE
13.0	0.6	-0.01	
14.5	0.6	0.02	
16.0	0.7	0.05	
17.5	0.7	0.05	
19.0	0.6	0.07	
20.5	0.6	0.08	
22.0	0.5	0.09	
23.5	0.5	0.10	
25.0	0.5	0.05	
26.5	0.5	0.06	
28.0	0.4	0.04	
29.5	0.35	0.04	
31.0	0.3	0.08	
32.5	0.3	0.10	
34.0	0.5	0.09	
35.5	0.6	0.01	
37.0	0.3	0.02	

Location _____ Date _____

Project / Client _____

~~38.5 0.25 0.00~~ ~~comment~~

Reach 1A SCR TRI meter

S	d	V (ft)	comment
24.5	0	0	LWE

5.5	.30	0
-----	-----	---

7.0	.30	0
-----	-----	---

8.5	.30	0
-----	-----	---

10.0	.30	.10
------	-----	-----

11.5	.50	.10
------	-----	-----

13.0	.50	0
------	-----	---

14.5	.60	.10
------	-----	-----

16.0	.70	0.16
------	-----	------

17.5	0.70	0.18
------	------	------

19.0	0.60	0.24
------	------	------

20.5	0.60	0.26
------	------	------

22.0	0.50	0.34
------	------	------

23.5	0.55	0.34
------	------	------

25.0	0.45	0.15
------	------	------

26.5	0.50	0.24
------	------	------

28.0	0.60	0.32
------	------	------

29.5	0.30	0.36
------	------	------

31.0	0.30	0.40
------	------	------

32.5	0.30	0.37
------	------	------

34.0	0.45	0.30
------	------	------

35.5	0.60	0.18
------	------	------

Location _____ Date _____

Project / Client _____

S	d	V (ft)	comment
35.5	0.60	0.18	near surface
37.0	0.35	0.02	
38.5	0.30	0	
39.0	0	0	RWE

ALL MEASUREMENTS
BEFORE THIS ON
7/18 TAKEN W/ THE
MARSH MCBIRNEX
WERE IN METERS PER
SECOND

upstream vel. not break

10° &

5° &

Location _____ Date _____

Project / Client _____

March McBirney

PEACH 1A SL2 TR2

S	d	V	Comments
12.2	0	0	LWE
12.5	0.20	0.07	25° Δ
13.0	0.30	0.13	20° Δ
15.5	0.20	0.09	20° Δ
17.0	0.20	0.08	70° Δ
18.5	0.10	0.09	90° Δ
22.0	0.10	0.10	90° Δ
22.5	0.20	0.24	30° Δ
23.0	0.20	0.11	30° Δ
23.5	0.20	0.24	15° Δ
26.0	0.20	0.33	15° Δ
27.5	0.20	0.21	15° Δ
29.0	0.05	0.25	
30.5	0.20	0.39	
32.0	0.20	0.30	
33.5	0.15	0.32	
35.0	0.20	0.23	10° Δ
35.5	0.20	0.16	
35.0	0.10	0.18	
39.5	0.01	0.12	
41.4	0	0	RWE

Location _____ Date _____

Project / Client _____

March McBirney

Reach 1A SL2 TR3

S	d	V	Comments
13.9	0	0	LWE
14.5	.02	.10	
15.25	.10	.13	10° Δ
16	.15	.12	10° Δ
16.75	.25	0.25	15° Δ
17.5	.40	0.29	5° Δ
18.25	.50	0.27	10° Δ
19.0	.50	0.38	5° Δ
19.75	.40	0.32	5° Δ
20.5	.50	0.41	
21.25	.50	0.35	5° Δ
22	.50	0.28	5° Δ
22.75	.55	0	4/s bldt break
23.5	.40	0	" " "
24.25	.30	0.19	
25	.30	0.26	
25.75	.20	0.11	
26.5	.15	0.02	10° Δ
27.25	.10	0.01	
28	.02	0.01	
37.8	.01	.10	
38.0	0	0	RWE

56

Location

Snoffer #404
Prop H 7A
Calis #186

Date 07-19-07

Project / Client

Reach 1A Marsh TR1

S	D	V	Comments
10.6	0	0	LWE
14 (1.7)	1.40	0.47	
22 (0.9)	2.00	0.85	
30 (0.7)	2.42	1.43	
38 (0.9)	2.10	1.37	
46 (0.9)	1.80	1.51	
54 (1.0)	1.55	1.27	
62 (1.0)	1.35	1.20	
70 (1.3)	1.05	1.21	
78 (1.2)	0.95	1.13	
86 (1.1)	0.80	0.97	
94 (1.0)	0.70	0.83	
102 (1.0)	0.70	0.81	
110 (1.0)	0.70	0.89	
118 (1.4)	1.10	1.02	
126 (1.5)	1.25	1.15	
134 (1.8)	1.55	0.98	
142 (1.4)	1.55	1.26	
150 (1.9)	1.65	1.24	
158 (1.75)	1.50	1.13	
166 (1.0)	0.82	0.75	
172.5	0.50	0.12	

.8' undercut

Location

Date 07-19-07

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Project / Client

Marsh McBirney (meters/sec)
Reach 1A, SC2, TR1

S	D	V	Comments
5.3	0	0	LWE
5.5 (0)	0.01	0	
7.0 (0.3)	0.15	-0.01	
8.5 (0.3)	0.15	-0.03	
10.0 (0.3)	0.15	-0.03	
11.5 (0.5)	0.30	-0.03	
13.0 (0.5)	0.35	0	
14.5 (0.6)	0.45	0	
16.0 (0.7)	0.50	0	
17.5 (0.7)	0.50	0	
19.0 (0.6)	0.40	0	
20.5 (0.6)	0.40	0	
22.0 (0.5)	0.30	0.01	
23.5 (0.55)	0.35	0.02	
25.0 (0.45)	0.25	0.01	
26.5 (0.50)	0.30	0.02	
28.0 (0.6)	0.40	-0.02	
29.5 (0.3)	0.10	-0.02	
31.0 (0.3)	0.15	0	
32.5 (0.3)	0.15	-0.01	
34.0 (0.45)	0.30	0.01	
35.5 (0.4)	0.40	0	
37 (0.35)	0.15	-0.02	

Location _____ Date _____

Project / Client _____

S	D	V	Comment
38.6	Ø	Ø	RWE

Location _____ Date 07/19/07Project / Client Marsh McBirney (meter/sec)Reach 1A, SC2, TR2

S	D	V	Comments
12.6	Ø	Ø	LWE
14.0 (0.30)	0.10	0.05	45° Δ
15.5 (0.20)	Ø	Ø	
17.0 (0.20)	0.01	Ø	
18.5 (0.10)	Ø	Ø	
20.0 (0.10)	0.01	0.05	90° Δ
21.5 (0.20)	0.05	0.02	
23.0 (0.20)	0.10	0.03	35° Δ
24.5 (0.20)	0.10	0.11	30° Δ
26.0 (0.20)	0.10	0.17	30° Δ
27.5 (0.20)	0.10	0.22	30° Δ
29.0 (0.05)	-0.10	Ø	
30.5 (0.20)	0.10	0.12	
32.0 (0.20)	0.10	0.02	
33.5 (0.15)	0.02	0.03	
35.0 (0.20)	0.03	0.01	
36.5 (0.20)	0.05	0.02	25° Δ
38.0 (0.10)	0.01	Ø	
39.6	Ø	Ø	RWE

Location

Date 07-19-07

Project / Client

Marsh McBriar (meters/sec)

Reach 1A, SC2, TR3

S	D	V	Comments
16.4	Ø	Ø	LWE
16.75(0.25)	0.01	Ø	
17.5(0.4)	0.15	0.06	5° Δ
18.25(0.5)	0.25	0.20	10° Δ
19.0(0.5)	0.22	0.17	5° Δ
17.75(0.4)	0.15	0.22	
20.5(0.3)	0.05	0.16	10° Δ
21.25(0.5)	0.20	0.13	5° Δ
22.0(0.5)	0.25	-0.01	20° Δ u/s rock vel. break
20.75(0.55)	0.30	-0.01	30° Δ u/s rock vel. break
23.5(0.4)	0.15	0.13	45° Δ
24.25(0.3)	0.05	0.08	45° Δ
25.0(0.3)	0.02	Ø	
25.4			RWE

Location

Swatler #4441

Date 07-19-07 61

Project / Client

Prop #7A
Calc #186

Reach 1A, Mainstem TR4

S	D	V	Comments
8.3	0.0	0.0	RWE of right channel
10.0(0.5)	0.15	0.84	
14.0(0.7)	0.40	0.36	
17.0(0.9)	0.60	0.88	
21.0(1.0)	0.72	1.05	
25.0(1.7)	1.35	2.04	
29.0(2.0)	1.60	2.26	
34.0(2.3)*	1.50	2.48	Depth?
38.0(2.3)*	1.30	0.99	Depth?
42.0(2.0)	1.60	2.88	
46.0(2.1)	1.70	2.25	
50.0(2.4)	2.10	2.16	
54.0(2.2)	1.80	2.71	
58.0(2.27)	1.85	2.83	
62.0(1.55)	1.25	2.59	
66.0(2.25)	1.75	2.30	
70.5(1.70)	1.30	2.01	
74.0(1.68)	1.30	2.02	
78.0(1.32)	1.00	2.08	
82.0(1.35)	1.00	1.65	
86.0(1.0)	0.70	1.30	
90.0(0.88)	0.50	0.69	
94.0(0.55)	0.25	0.47	

Location _____

Date 07-19-07

Project / Client _____

Reach 1A, Mainstem TR4 Contd.

<u>S</u>	<u>D</u>	<u>V</u>	<u>Comments</u>
1696.5(0.49)	0.05	Ø	
1697.0	Ø	Ø	Loe of Right Channel
17	middle WP = 139.7		
18173.3			RoE of Left channel
19174.0(0.52)	0.30	0.65	
19177.0(0.60)	0.35	1.08	
20180.0(0.62)	0.40	0.74	
21183.0(0.62)	0.40	0.93	
22186.0(0.88)	0.65	1.17	
22189.0(1.10)	0.82	1.56	
23192.0(1.15)	0.90	1.58	
24195.0(0.90)	0.60	1.76	
25198.0(1.10)	0.80	1.28	
26200.5(1.02)	0.80	0.55	
202.0(0.88)	0.65	0.29	u/s boulder break
205.0(0.90)	0.70	0.16	
208.0(0.78)	0.45	0.29	45° Δ u/s boulder break
211.0(0.45)	0.20	Ø	
214.0(0.30)	0.10	0.55	5% Δ
217.0(0.20)	0.01	0.05	90° Δ
220.0(0.32)	0.05	0.15	45° Δ
223.0(0.66)	0.35	Ø	
226.0(0.70)	0.40	Ø	

Location _____

Date _____

Project / Client _____

Reach 1A, Mainstem TR4 Contd.

<u>S</u>	<u>D</u>	<u>V</u>	<u>Comments</u>
229.0(0.7)	0.40	0.18	
232.0(0.80)	0.40	Ø	
232.8			Loe of Left channel

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Swafford # 4441

PROP # 78

C-12 # 186

Location

Date 07-19-07

Project / Client

Reach 1A, Mainstem TR2

S	D	V	Comments
24.6	Ø	Ø	RUE
28.0(0.4)	0.05	Ø	
32.0(0.5)	.15	0.26	
38.0(0.75)	.40	.57	
43.0(1.0)	.70	0.72	
48.0(1.15)	.80	.87	
53.0(1.4)	1.05	1.29	
60.0(1.5)	1.20	.97	
65.0(1.6)	1.30	1.03	
70.0(1.5)	1.30	1.00	
75.0(2.1)	1.80	1.30	
78.0(2.25)	1.90	1.35	
83.0(1.9)	1.55	1.53	
88.0(2.4)	2.05	1.50	
93.0(2.7)	2.35	1.73	
98.0(3.0)	2.62	1.71/1.36	
103.0(3.1)	2.75	1.63/1.32	
108.0(3.1)	2.75	1.58/1.32	
113.0(2.1)	2.75	1.61/1.26	
118.0(2.9)	2.55	1.46/1.08	
123.0(2.75)	2.35	1.29	
128.0(2.6)	2.27	1.27	
133.0(1.75)	1.40	0.86	

65

Location

Date

Project / Client

Reach 1A Mainstem TR2 (cont'd)

S	D	V	Comments
138.0(1.25)	0.9	0.66	
142.3	Ø	Ø	LWE

Location

Swooller #4441

Drip # 7A

Calib # 186

Date 07-20-07

Project / Client

Reach #1A, Mainstem TR 1

STA	Depth	Veloc	Sub	%Don	Cover
10.9	0	0	27	60%	2
14.0 (1.4)	1.2	0.38	62	65%	2
22.0 (2.3)	2.1	0.74	58	60%	2
30.0 (2.42)	2.2	0.85	52	65	
38.0 (2.7)	1.9	0.83	43	70	
46.0 (1.8)	1.6	0.86	43	70	
54.0 (1.55)	1.32	0.88	43	70	
62.0 (1.35)	1.15	0.77	43	70	
70.0 (1.05)	.85	.64	43	70	
78.0 (0.93)	.72	.72	43	70	
86.0 (0.80)	.60	.64	43	70	
94.0 (0.70)	.50	.53	43	70	
102.0 (0.70)	.50	.72	45	60	
110.0 (0.70)	.50	.58	43	70	
118.0 (1.10)	.90	.61	45	70	
126.0 (1.25)	1.05	.73	56	55	
134.0 (1.55)	1.35	.61	65	65	
142.0 (1.55)	1.30	.88	75	60	
150.0 (1.65)	1.48	.95	65	60	
158.0 (1.5)	1.30	.90	76	55	
166.0 (0.87)	.60	.58	76	60	
172.5	.25	.04	65	65	

Location

Date

Project / Client

Comments

10° Δ
25° Δ

8' undercut bank

Location _____

Date 07-20-07

Project / Client _____

Marsh MCB (M/S)

Reach 1A, Sc2, TR1

S	D	V	Comments
5.5	Ø	Ø	
7.2	.15	-0.02	
10.5	.13	Ø	
10.6	.12	-0.05	
13.7	.25	-0.01	
14.0	.13	Ø	
14.1	.42	Ø	
14.7	.20	.01	
14.7	.49	Ø	
15.7	.21	Ø	
19.0	.37	-0.01	
19.1	.28	Ø	
21.2	.24	Ø	
21.2	.25	0.01	
21.2	.30	.01	
22.5	.41	-0.01	
22.5	.1	-0.05	
28.1	.12	-0.02	
28.5	.15	Ø	
29.0	.5	Ø	
29.7	.42	-0.01	
29.7	.25	-0.01	
38.5	Ø	Ø	RWE

Location _____

Date 07-20-07

Project / Client _____

Reach 1A, Sc2, TR2 Marsh McKing (M/S)

S	D	V	Comments
12.6	Ø	Ø	LINE
14.0(0.1)	.10	0.02	30°A
15.5(Ø)	Ø	Ø	
17(0.01)	Ø	Ø	
18.5(0.0)	-0.05	Ø	
20(0.01)	Ø	Ø	I/S Flow*
21.5(0.05)	-0.02	.05	
23(0.1)	.1	.08	30°A
24.5(0.1)	.1	.13	30°A
26(0.1)	.1	.16	20°A
27.5(0.1)	.08	.08	20°A
29(-0.1)	-0.12	Ø	
30.5(0.1)	.09	.10	
32(0.1)	.09	.19	
33.5(0.02)	.01	.05	est
35(0.03)	.01	.1	est
36.5(0.05)	.03	.11	
38(0.01)	Ø	Ø	I/S Flow*
39.6			RWE

*I/S Flow = interstitial

Location _____

Date

07-20-07

Project / Client _____

Marsh McBeaver m/s)

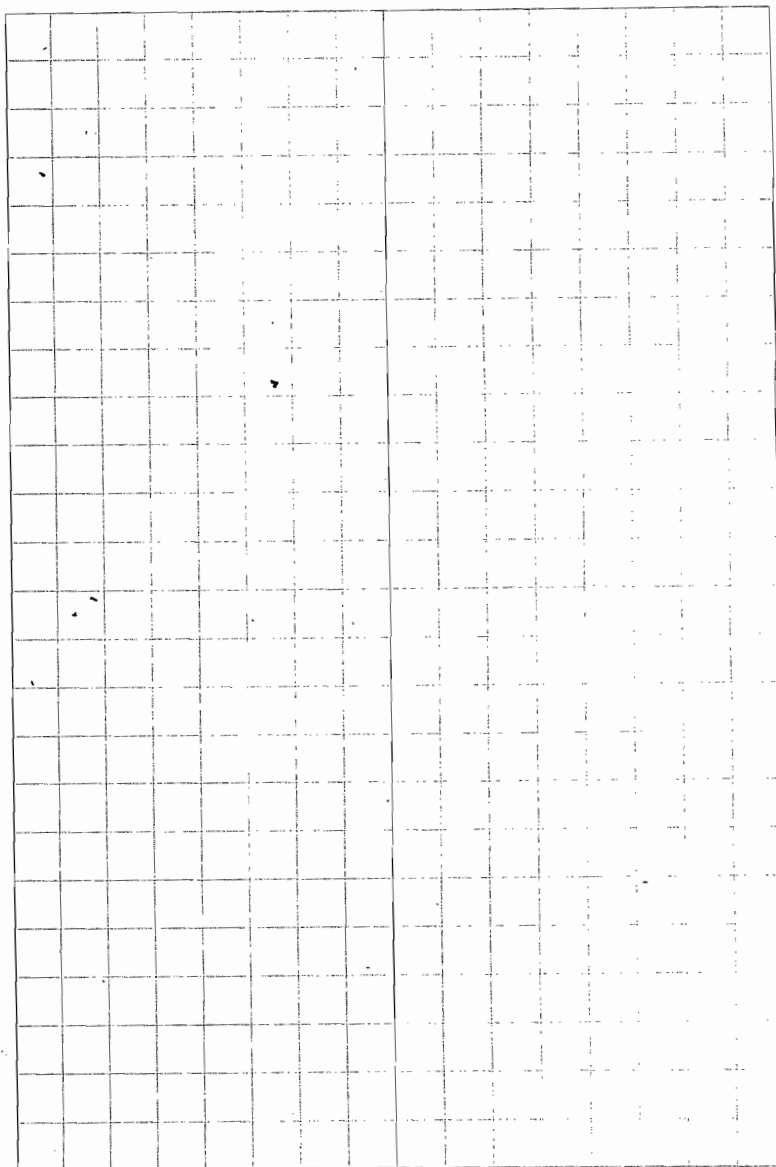
Reach 1A, SC2, TR 3

S	D	V	Comments
16.5	0	0	Low
16.75(0.01)	0	0	
17.5(0.15)	.12	.1	10° Δ
18.5(0.25)	.22	.17	10° Δ
19.0(0.22)	.20	.20	5° Δ
19.5(0.15)	.13	.14	
20.5(0.03)	.02	.19	
21.25(0.20)	.20	.16	15° Δ
22.0(0.25)	.23	-0.04	u/s vel. boulder
22.75(0.30)	.27	-0.03	" " "
23.5(0.01)	.12	.08	5° Δ
24.25(0.05)	.20	0	
25.0(0.02)	0	0	I/S FLOW
25.3	0	0	

Location _____

Date _____

Project / Client _____



Location _____

Date _____

Project / Client _____

Reach 12, Mainstem TR 4 Contd.

S	N	N	Subst	%Dom	Cover
46.5	(0.05)				

midline wpt = 139.7

134(0.3)	.10	.09	34	50	
137(0.35)	.8	.55	47	70	
132(0.4)	.2	.0	54	65	
133(0.4)	.01	.42	56	60	
140(0.65)	.45	.35	5	65	
149(0.5)	.0	.91	34	70	
151(0.4)	.12	.82	56	65	
145(0.5)	.40	.80	53	65	
151(0.8)	.50	.51	55	60	
200.5(0.6)	.60	.50	65	70	
202(0.65)	.55	.14	76	60	
205(0.4)	.10	.0	80	70	
208(0.45)	.35	.0	80	70	
211(0.2)					
214(0.10)					
217(0.05)					
220(0.05)					
224(0.25)		.0	70	70	
226(0.2)	.2	.0	5	70	

Location _____

Date _____

Project / Client _____

Comment

LWE of Right channel

RWE of Left channel
.est

45°

u/s b/d = break
" " " "

Location _____

Date _____

Project / Client _____

Reach 1A, Transect 4 (cont'd) - -

<u>S</u>	<u>D</u>	<u>V</u>	<u>Subst</u>	<u>% Dam</u>	<u>Cover</u>
229 (04)	222	0	45	55	2
230 (04)	222	0	34	60	2
232 (04)	222	0	83	70	2

Location _____

Date _____

Project / Client _____

Comments

LWE L channel

Location _____

Date _____

Project / Client _____

Sect 18A Mainline R 2

	L	N	Gr	% Slope	Area
1	3'	2'	3'	30	
2	4'	2'	7'	60	
3	4'	2'	6'	55	
4	4'	2'	6'	60	
5	4'	2'	7'	60	
6	4'	2'	7'	60	
7	4'	2'	7'	60	
8	4'	2'	7'	60	
9	4'	2'	7'	60	
10	4'	2'	7'	60	
11	4'	2'	7'	60	
12	4'	2'	7'	60	
13	4'	2'	7'	60	
14	4'	2'	7'	60	
15	4'	2'	7'	60	
16	4'	2'	7'	60	
17	4'	2'	7'	60	
18	4'	2'	7'	60	
19	4'	2'	7'	60	
20	4'	2'	7'	60	
21	4'	2'	7'	60	
22	4'	2'	7'	60	
23	4'	2'	7'	60	
24	4'	2'	7'	60	
25	4'	2'	7'	60	
26	4'	2'	7'	60	
27	4'	2'	7'	60	
28	4'	2'	7'	60	
29	4'	2'	7'	60	
30	4'	2'	7'	60	
31	4'	2'	7'	60	
32	4'	2'	7'	60	
33	4'	2'	7'	60	
34	4'	2'	7'	60	
35	4'	2'	7'	60	
36	4'	2'	7'	60	
37	4'	2'	7'	60	
38	4'	2'	7'	60	
39	4'	2'	7'	60	
40	4'	2'	7'	60	
41	4'	2'	7'	60	
42	4'	2'	7'	60	
43	4'	2'	7'	60	
44	4'	2'	7'	60	
45	4'	2'	7'	60	
46	4'	2'	7'	60	
47	4'	2'	7'	60	
48	4'	2'	7'	60	
49	4'	2'	7'	60	
50	4'	2'	7'	60	
51	4'	2'	7'	60	
52	4'	2'	7'	60	
53	4'	2'	7'	60	
54	4'	2'	7'	60	
55	4'	2'	7'	60	
56	4'	2'	7'	60	
57	4'	2'	7'	60	
58	4'	2'	7'	60	
59	4'	2'	7'	60	
60	4'	2'	7'	60	
61	4'	2'	7'	60	
62	4'	2'	7'	60	
63	4'	2'	7'	60	
64	4'	2'	7'	60	
65	4'	2'	7'	60	
66	4'	2'	7'	60	
67	4'	2'	7'	60	
68	4'	2'	7'	60	
69	4'	2'	7'	60	
70	4'	2'	7'	60	
71	4'	2'	7'	60	
72	4'	2'	7'	60	
73	4'	2'	7'	60	
74	4'	2'	7'	60	
75	4'	2'	7'	60	
76	4'	2'	7'	60	
77	4'	2'	7'	60	
78	4'	2'	7'	60	
79	4'	2'	7'	60	
80	4'	2'	7'	60	
81	4'	2'	7'	60	
82	4'	2'	7'	60	
83	4'	2'	7'	60	
84	4'	2'	7'	60	
85	4'	2'	7'	60	
86	4'	2'	7'	60	
87	4'	2'	7'	60	
88	4'	2'	7'	60	
89	4'	2'	7'	60	
90	4'	2'	7'	60	
91	4'	2'	7'	60	
92	4'	2'	7'	60	
93	4'	2'	7'	60	
94	4'	2'	7'	60	
95	4'	2'	7'	60	
96	4'	2'	7'	60	
97	4'	2'	7'	60	
98	4'	2'	7'	60	
99	4'	2'	7'	60	
100	4'	2'	7'	60	

Location _____

Date _____

Project / Client _____

Comments

RUE

RUE

Location _____ Date _____

Project / Client _____

Lowe's / A TV Monitor TK2 1000

Qty	Unit	Price	Sub	Total	Notes
2	TV	55	68	70	2
140	TV	75	60		2

Location _____ Date _____

Project / Client _____

Comments

LWE

Location TR-1

8/21/07

Project / Client SCI-TR3SWOTTER LOG
PROJ # SA 175

STA	DEP	VEL
1.0 LWP		
8.0	0	0
9.0	0.25	0
10.0	0.40	0
11	0.70	0
12	0.90 0.90	~0.16
13	1.10	~0.05
14	1.10	0
15	1.30	0
16	1.60	0
17	1.70	0.02
18	1.75	0.37
19	2.10	0.69
20	2.10	0.35
21	2.10	0.72
22	2.30	0.73
23	2.70	0.51
24	1.45	0.47
25 RWE	0.70	0.00

Depth 0.35' DURATION

8/21/07

SCI-TR3

SWOTTER LOG
PROJ # SA

STA	DEP	VEL	STA	DEP	VEL
1.0 LWP					
7.4	0	0	19.5	0.65	1.02
8	0.20	0	20	0.70	1.11
9	0.20	0	20.5	0.70	1.51
10	0.15	0.78	21	0.80	1.82
11	0	0	21.5	0.70	1.46
11.5	-0.1	0.44	22	0.40	1.02
12	0.50	1.37	22.5	0.40	0.66
12.5	0.50	1.37	23	0.30	0.28
13.0	0.45	1.58	23.5	0.25	0.01
13.5	0.50	1.54	24 RWE	0	0
14.0	0.50	1.49			
14.5	0.50	1.74			
15	0.45	1.60			
15.5	0.60	1.43			
16	0.40	1.84			
16.5	0.60	1.71			
17	0.65	1.82			
17.5	0.40	1.98			
18	0.60	1.50			
18.5	0.35	1.56			
19	0.55	0.94			

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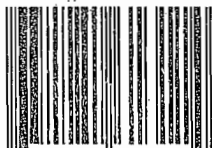
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Sultan River Instream Flow Study


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WATERPROOF
LEVEL
No. 613

Side Channel 1 & 2
Jackson Project

1628.04

2 of 2

8/23/07

STA	BS	HI	FS	Elev	Rd
B.M.	4.40			100.00	
		104.40			
RWP (Top)			4.46	99.94	/
RWSE			9.76	95.74	
LWSE			9.59		
d/S "25'			9.38		
d/s			10.12		
	95.06 94.64				
104 					
<u>Photo Log</u>					
#	095	looking d/s			
	094	Rt → Lt			
	096	Looking Lt → Rt			
	097	" u/s			

SC#2 TR-3 Div 8/23/07

STA	Depth	Vel	STA	Depth	Vel
LWE=11.4	0.0	0.0			
9.0	dry		28.0	0.38	1.42 $\angle 10^\circ$
10.5	dry		29.5	.15	1.02 15°
12.0	0.10	0.05	31.0	0.20	0.62
13.5	0.30	0.05	32.5	0.05	NM(N.35)
14.5	0.37	0.48	34.0	0.05	"
15.25	0.50	0.68	35.5	0.10	0.42
16.0	0.55	0.97	37.0	0.30	0.65
16.75	0.70	1.41	38.5	RWE 0.0	0.0
17.5	0.82	1.51			
18.25	0.98	1.55			
19.0	0.88	2.64			
19.75	0.88	3.08			
20.5	0.92	2.89			
21.25	0.80	3.12			
22.	0.88	2.27			
22.75	0.80	2.29			
23.5	0.82	1.820			
24.25	0.67	1.86			
25	0.67	1.56			
25.75	0.55	1.76			
26.5	0.52	1.72			
27.25	0.50	1.10			

SC-2 TR-2 8/23/07

STA	BS	HI	FS	Eleva	Rod
Bm	1.38			100.00	
Top RWP (wood stake)		101.38	2.58		
Top LWP (rebar)			3.55		
RWS			6.21	95.17	0.0
LWS			6.22		
d/s "30'			6.33		
u/s "25'			6.02		
Swaffer: 4099					
prop: 5A					
cal: 0175					
Photo Log					
#	098	Rt → Lt			
#	099	looking u/s			
#	100	Lt → Rt			
#	101	looking d/s			

8/23/07

SC-2

TR-2

DEVI measurement

STA	Depth	Vel	STA	Depth	Vel
10.4	LWE 0.0	0.0			
10.0	(0.18)				
11.5		0.46			
12.5	0.33	0.38			
14.0	0.50	0.75	430°		
15.5	0.40	0.66	420°		
17.0	0.42	0.74	410°		
18.5	0.30	1.19			
20.0	0.30	1.53			
21.5	0.42	1.61			
23.0	0.50	1.61			
24.5	0.52	2.37			
26.0	0.50	2.23			
27.5	0.50	2.04			
29.0	0.30	2.42			
30.5	0.48	2.63			
32.0	0.40	3.11			
33.5	0.37	3.02			
35.0	0.42	2.19			
36.5	0.45	1.50			
38.0	0.37	2.10			
39.5	0.30	1.43			
41.0	0.20	1.07			
RWB	42.8	0.0	0.0		

SC#2

TR-1

Pin Check & WSE

Aug 24, 07

STA	B.S.	H.I.	F.S.	Elev.	Red
Bm nail	3.01			100.00	
		103.01			
HP (Nail Top RWP)			2.35	100.66	
RWS			8.51	94.50	0.0
d/s ~ 25'			8.63		0.0
LWS			9.19		8.69
			(8.50)		
u/s ~ 25'			8.47		0.0
swiffer #	4099				
prp #	5A				
cal:	0175				
Photo Log:					
#	102	RT → LT			
	103	looking d/s			
	104	" u/s			
	105	LT → RT			

SC#2 TR-1 Div V 8/24/07

STA	Depth	Vel	STA	Depth	Vel
5.2	0.0	0.0	37.0	0.80	~.05
5.5	0.5	~0.05	38.5	0.60	~.05
7.0	0.67	0.11	40.0 RWP	0.0	0.0
8.5	0.6	0.32			
10.0	0.65	0.45			
11.5	0.74	0.59			
13.0	0.88	0.48			
14.5	0.90	0.66			
16.0	0.99	0.60			
17.5	0.99	0.70			
19.0	0.90	0.81			
20.5	0.88	0.81			
22.0	0.80	0.99			
23.5	0.88	0.98			
25.0	0.73	1.22			
26.5	0.80	1.07			
28.0	0.90	0.76			
29.5	0.60	0.95			
31.0	0.60	0.93			
32.5	.52	.81			
34.0	.56	.57			
35.5	0.90	0.43			

SC#1 TR-1 8/24/07

STA	BS	HI	FS	Elev	Ref
B.M. (na)	6.62			100.00	
		106.62			
HP (RWP)			5.57	101.05	
RWS			10.56		
LWS			10.57		
v/s ~25'			10.91		0.35
d/s ~25'			10.70		0.0

* Sweeper # 4099 *
 prop # 4B
 cal: 0125

Photo Log

106 - R+ → Lt
 107 + looking v/s
 108 - " d/s
 109

SC# TR-1 DEIV 8/24/07

STA	Depth	Vel	STA	Depth	Vel
7.			25.5	0.15	0.01
7.5 LWE	0.0	0.0	26.0	0.05	0.01
8.0	0.42	0.0	26.5		
9	0.69	0.01	27.0		
10	0.7	0.01	RWE 26.2	0.0	0.0
11	0.8	0.01			
12	1.02	0.01			
13	1.10	0.02			
14	1.0	0.01			
15	0.92	0.01			
16	0.99	0.01			
17	0.92	0.01			
18	0.80	0.01			
19	0.64	0.01			
20	0.55	0.01			
21	0.30	0.01			
22	0.17	0.01			
23	0.05	0.01			
23.5	0.05	0.01			
24	0.10	0.01			
24.5	0.12	0.01			
25	0.20	0.01			

SC#1 TR-2 WSE 8/24/07

STA	B.S.	HI	FS	Eleva	Rod
BM (near)	2.13			100.00	
HP (RWP)		102.13	4.21	97.92	
RWS			6.31		0.0
LWS			6.30		0.0
d/s ~ 20'			7.15 (6.30)		0.85
u/s ~ 18'			6.29		0.0

Photo Log

- # 110 - Rt → Lt
- 111 - Looking d/s
- 112 - Lt → Rt
- 113 - Looking u/s

SC#1 TR-3 DEW 8/24/07

STA	Depth	Vel	STA	Depth	Vel
LWE 11.5					
8			20.0	0.32	0.33
9			20.5	0.30	0.49
10			21.0	0.40	0.54
11			21.5	0.30	0.05
11.5 LWE			22.0	0.05	0.01
11.6 0.0	0.0		22.5	—	
12.0 0.12	0.68		23.0	—	
12.5 0.12	0.96		23.5	—	
13.0 0.05	0.85				
13.5 0.10	0.80		RWE 22.4	0.0	0.0
14.0 0.10	~0.50				
14.5 0.10	~.50				
15.0 0.10	~.50				
15.5 0.21	.32				
16.0 out -0.05	—				
16.5 0.20	1.07				
17.0 0.22	0.93				
17.5 out -0.05	—				
18.0 0.21	0.75				
18.5 out -0.10	—				
19.0 .10	1.05				
19.5 .15	.52				

more d/s ~ .3' fast's Vel.

SC#1 TR-4 8/24/07

STA	BS	HT	FS	Eleva	Rad
BM	3.97			100.00	
		103.97			
HP(RWP)			3.26	100.71	
RWS			6.00		0.0
LWS			6.00		
d/s ~30'			7.46 (5.97)	93.00	1.49
d/s ~25'			5.99	97.95	0.0

Photo Log

#118 — look Key Rt-Lt
119 — " d/s
120 → Lt → Rt
121 — looking v/s

SC #1 TR-4 8/24/07

STA Depth Vel

RWB 52.1 0.0 0.0

LWE 8.6 0.0 0.0

* NO flowing water / too slow to measure (< 0.01 ft/sec)

* could est. vel at ≈ 0.01 to cal. discharge

SC #1 TR-5 8/24/07

STA BS HI FS Eleva Rad

BM 0.35 100.00

100.35

HP(RWP) 2.72 97.63

RWS 6.45 (5.71) 94.64 0.74

LWS 6.16 (5.72) 94.63 0.44

u/s ~12' 6.20 (5.72) 94.63 0.48

d/s ~20' 5.73 94.62 0.0

Photo Log

122 - RT \rightarrow LT

123 - u/s

124 - LT \rightarrow RT

125

SC#1 TR-5 8/24/07

STA Depth Vel.

RWE 25.1

3' ucb

LWE 9.10 0.0 0.0

* unable to measure velocity
< 0.10 ft/sec

* could possibly use ~ 0.10 ft/sec
to est. discharge at this
transect

SC#1 TR-6 8/24/07

STA BS HI FS Eleva Rod

BM 3.97

100.00

103.97

HP-1 (RWP)

4.47 99.50

HP-2
TR-2
Mainstem Rebar

3.05 100.92

RWS

8.09 95.88

LWS

8.09 95.88

d/s "20'

9.22
(8.08) 95.89 1.14

u/s "16'

9.01
(8.07) 0.92

TR-2
HP 3.44

104.36

100.92

* TR-2 WSE

8.51

Photo Log:

125 - Rt -> Lt

126 - looking u/s

127 - " d/s

128 - Lt -> Rt

Swath Meter #4099 / prop 4B / Cal 125

SC#1 TR-6 DE V 8/24/07

STA	Depth	Vel	STA	Depth	Velocity
9.8 LWC	Ø	Ø	23.5	0.50	0.05
10.0	0.05	Ø	24.0	0.40	0.03
11.5	0.25	0.05	24.5	0.45	0.01
13.0	0.54	0.05	25.0	0.45	0.01
13.5	0.62	0.02	25.5	0.20	0.01
14.0	0.66	0.07	*15.0	0.60	0.21
*14.5	0.66	0.13	*22.0	0.50	0.13
15.5	0.60	0.20	25.9 RWE	Ø	Ø
16.0	0.55	0.23			
16.5	0.55	0.25			
17.0	0.50	0.23			
17.5	0.55	0.29			
18.0	0.60	0.30			
18.5	0.55	0.22			
19.0	0.55	0.25			
19.5	0.50	0.25			
20.0	0.50	0.23			
20.5	0.55	0.23			
21.0	0.50	0.22			
21.5	0.50	0.20			
*22.5	0.45	0.10			
23.0	0.48	0.05			