

# Stream Surveys of the West (Upper) Moberly River Watershed (Summer, 1992)

H. Hohndorf, G. Hopcraft and T. Down February 1993

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#### ABSTRACT

The West Moberly River (upstream of Moberly Lake) is a watershed for which minimal fisheries inventory had been collected despite the presence of an active logging program. Preliminary inventory and anecdotal information suggested a diverse but declining fish population. The purpose of this work was to survey, map and describe fish habitat and populations in the West Moberly watershed with the goal of providing a database useful for establishing informed management, habitat protection and enhancement prescriptions. This work was undertaken during the summer of 1992 under unusually dry conditions. The principle sport fish found included mountain whitefish, bull trout and rainbow trout. The latter two species showed some segregation within the watershed. Fish populations appear to be depressed (based on available habitat) but further work should be undertaken on mainstem habitats which may provide vital shelter during low flow periods.

#### ACKNOWLEDGEMENTS

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#### STREAM SURVEYS OF THE WEST (UPPER) MOBERLY RIVER WATERSHED

#### Introduction

West Moberly is the local name applied to that portion of the Moberly River upstream of Moberly Lake. The West Moberly River originates in the Rocky Mountains approximately 65 km west of Chetwynd. It parallels the Pine River to the south as it flows eastward into Moberly Lake at 55°49' N. latitude, 122°52' W. longitude (Figure 1). Moberly Lake is drained by the continuation of the Moberly River which flows northeast to it's confluence with the Peace River, just south of Fort St. John.

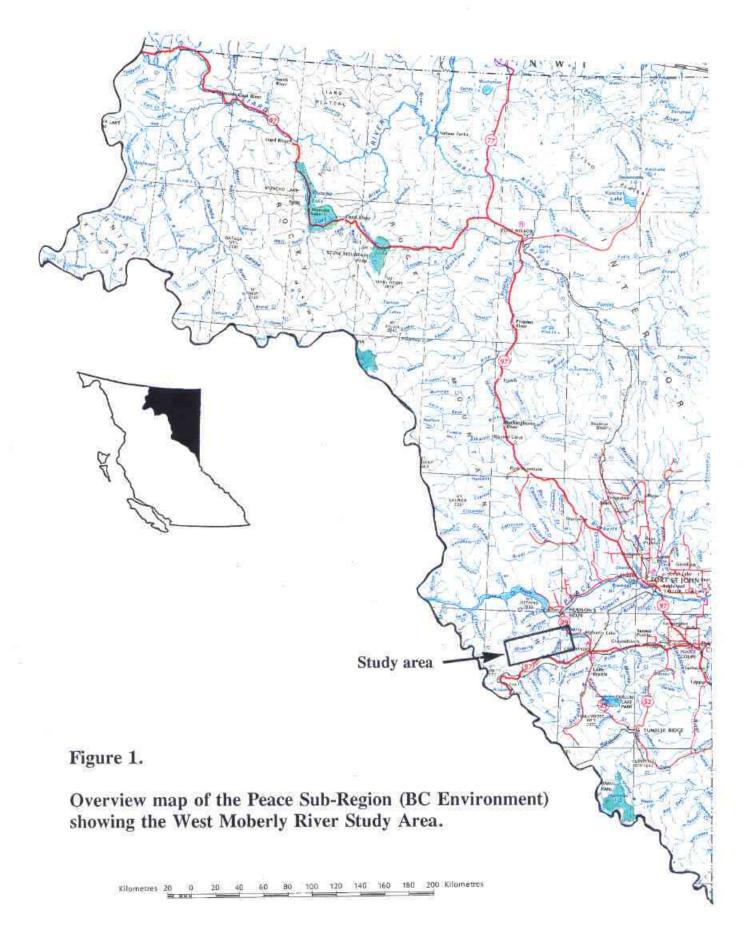
Anecdotal information suggested that the West Moberly supported fish populations typical to mountain streams in the Peace drainage and this was further supported by members of the West Moberly Indian Band who reported bull trout (*Salvelinus confluentus*), mountain whitefish (*Prosopium williamsoni*), Arctic grayling (*Thymallus arcticus*) and rainbow trout (*Oncorhynchus mykiss*) to be generally present in this river system (pers. com., Chief George Desjarlais).

The first formal inventory undertaken in this upper watershed appears to be stream surveys conducted by BC Environment, Fisheries Branch staff in 1991. Sites surveyed included Hullcross Creek, Highrise Creek, Shangweshi Creek, one unnamed creek, and the mainstream West Moberly itself. The results of these surveys are on file in the Fort St. John, Fisheries Branch office. An Amoco proposal to conduct exploratory drilling for petroleum in the Beattie Peaks area has resulted in an environmental impact assessment for the West Moberly watershed, and provides some concerns for fisheries but no hard inventory data.

The present study was funded by the Peace/Williston Fisheries Compensation Program. Although primarily focused on the Williston and Dinosaur Lake watersheds, this program does support enhancement activities in nearby watersheds as there are limited opportunities to effectively enhance fish in Dinosaur Lake itself. The present study is consistent with Compensation Program objectives in that critical fish habitat is identified both for protection and to identify possible enhancement opportunities.

Fish and fish habitat surveys of the West Moberly River system were conducted in the summer of 1992. The specific objectives of these surveys were to:

- (1) Determine species composition for both traditional sport and non-sport species.
- (2) Survey, categorize, and map fish habitat throughout the study area.
- (3) Determine Arctic grayling, bull trout, and rainbow trout population characteristics, such as density, distribution, age structure, recruitment, and growth.
- (4) Assess enhancement opportunities for sport fish and their habitat.



#### Materials and Methods

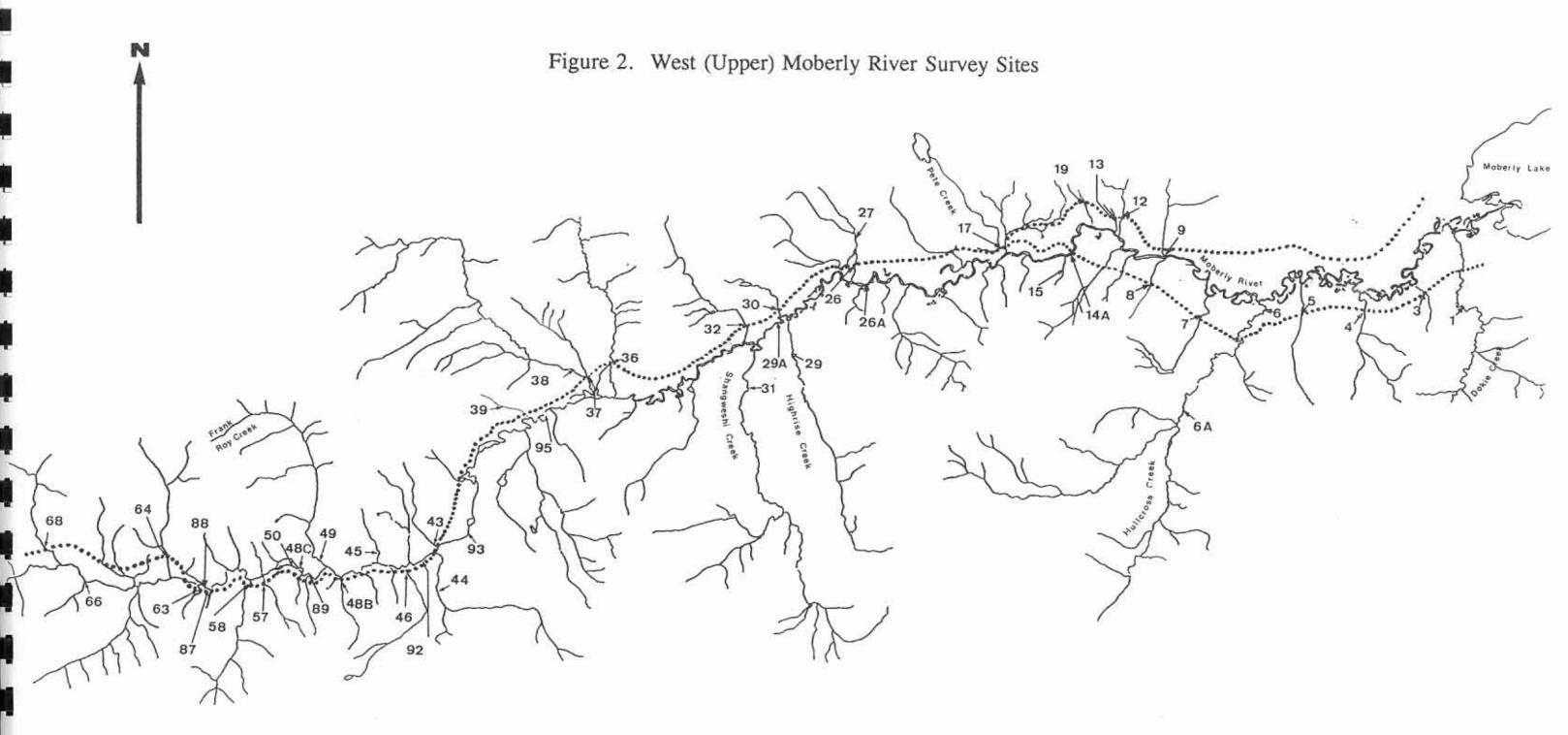
Although it would have been desirable to survey each tributary and each reach of the mainstem West Moberly, we were restricted to ground access for this project. As such, desirable survey locations were first identified on Department of Energy, Mines, and Resources 1:50,000 topographical maps. Accessibility of reaches was assessed using 1:50,000 aerial photomosaics in conjunction with maps provided by the West Fraser Forest Products 5-year development plan. Survey sites on tributaries were often located near the mouth, since such areas are typically of lower gradient and more likely to be frequented by fish than are the higher gradient areas typically found further upstream. Figure 2 provides the approximate locations of inventory sites in the West Moberly watershed. Precise sampling locations have been plotted onto 1:50,000 topographical maps (Appendix  $C^1$ ).

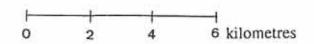
Surveys were conducted June 2 - June 19, and July 29 - August 6, 1992. Peak freshet flows usually occur in late May to mid-June in the Peace watershed, therefore the larger systems and mainstem were surveyed during the latter time interval. Several smaller systems surveyed in June were revisited in July/August to obtain comparative flows. Survey sites were accessed with a 4-wheel drive vehicle, although for the majority of the sites, 2-wheel drive would have sufficed.

Survey data was recorded on Department of Fisheries and Oceans (DFO)/Ministry of Environment (MOE) Stream Survey Forms (Appendix A), according to the Stream Survey Field Guide (DFO/MOE, 1989). Since surveys were based on sites, as opposed to reaches, any information pertaining to reaches on the survey forms were omitted.

Typically, a stream length of 100 m was surveyed for each site. Width and depth measurements were carried out using surveyor's tape and measuring sticks, respectively. About five measurements were taken for each of these parameters. Channel widths and wetted widths were recorded to the nearest 0.1 m. Depths were recorded to the nearest 1.0 cm. Gradients were measured with a clinometer. Parameters such as % pool-riffle-run, % debris, % bars, % unstable banks, and % total cover, were established using ground estimates, as was 'length surveyed'. The location of obstructions was recorded with reference to the survey site, as opposed to the distance of the obstruction from the mouth. Measurements of pH, dissolved oxygen, and conductivity were omitted due to time constraints. However, on occasion, comments were made regarding conductivity in streams where electroshocker output was noticed to be uncharacteristically low, indicating low conductivity. In cases where water clarity (as an estimate of turbidity) exceeded measurable depth, the measurement for the deepest pool was used. Widths and depths for the discharge measurements were recorded to the nearest 0.1 m, and nearest 1.0 cm, respectively. Velocities were determined using the floating object method, where a floating object was timed a known distance along the stream (usually 10 m).

Appendix 'C' is only available in the BC Environment, Fort St. John Library copy of this report.





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In some cases, where streams were either too low in flow or too deep, a rudimentary survey was completed. These surveys included temperature measurements, photographs, and, on occasion, depths and widths. In other cases, only temperatures and descriptions of flow were recorded in a temperature log, but no stream survey forms were completed.

Fish were collected using either a Coffelt BP-1C gas-powered backpack electroshocker, or a Dirigo 850 battery-powered backpack electroshocker. Fish were usually collected within the survey site boundaries, and occasionally beyond, in instances where potential fish habitat layjust outside the boundaries. The electroshocking was carried out in a single-pass upstream fashion (without the use of stopnets at either end of the survey site) to determine fish species present. Outputs of 150 Watts and 100 V - 500 V were used with the gas-powered, and battery-powered shockers, respectively. The Dirigo shocker did not appear as effective at capturing fish as did the Coffelt model. As such, no reliable estimates of relative abundance (to compare tributaries) are possible. Captured fish were anaesthetized using a solution of MS-222 (Tricaine methane sulfonate), enumerated, measured (fork-length), and released. A small, representative sample of each catch was sacrificed, and preserved in 10% formalin (archived at Fisheries Branch, Fort St.John). Scale samples for age determination were taken from any char, trout, grayling or whitefish over 15 cm in fork-length.

#### **Results and Discussion**

A summary of the biophysical data collected for each survey site is presented in Table 1, while copies of the original stream survey forms, along with corresponding photographs are included in Appendix A. Table 2 provides temperature and flow observations for sites that were not formally surveyed.

A species distribution map for the study area is presented in Figure 3. Summaries of habitat characteristics for: sites where fish were found; sites with good sport fish habitat but where no fish were found; and sites where neither fish nor suitable sport fish habitat were found; are presented in Tables 3, 4, and 5, respectively. Appendix B provides specific data for all fish sampled.

Relatively few fish were captured over the course of this study (n=214) and the majority (>86%) of these were cottids (Appendix B). Sport species were captured in very low numbers including 12 bull trout, 7 rainbow trout and 7 mountain whitefish (together accounting for 12.2% of the catch). As such, no population age structure or growth statistics are available. Although it appears that fish populations are generally depressed in this watershed (relative to available habitat), both the level of effort and the unreliable functioning of the Dirigo electroshocker must be taken into account.

The summer of 1992 was exceptionally hot and dry, resulting in lower than average flows throughout the Peace River watershed. Many of the West Moberly tributaries had insufficient flows at the time of survey to support fish, however, these systems may be seasonally important or may flow year-round under normal climatic conditions. Generally, many of the West

Moberly tributaries appeared flashy, with high flow during June, and low or no flow by early August (see discharges, Tables 1 & 2). The more stable tributaries often exhibited significant beaver activity (dams) which may have resulted in the loss of certain habitat types and impeded fish passage but may also be providing critical holding areas during low flow periods. Given the unusually low water levels in many tributaries, it is possible that significant numbers of fish were taking refuge in the deeper, less accessible waters of the mainstem West Moberly.

As many of the surveys were conducted close to tributary mouths, stream gradients were generally lower than 3% (Table 1), and stream channels were typically unconfined. Water temperatures during early June were found to be generally low ( $< 12^{\circ}$ ) which may have an impact on productive capacity, even where habitat was suitable.

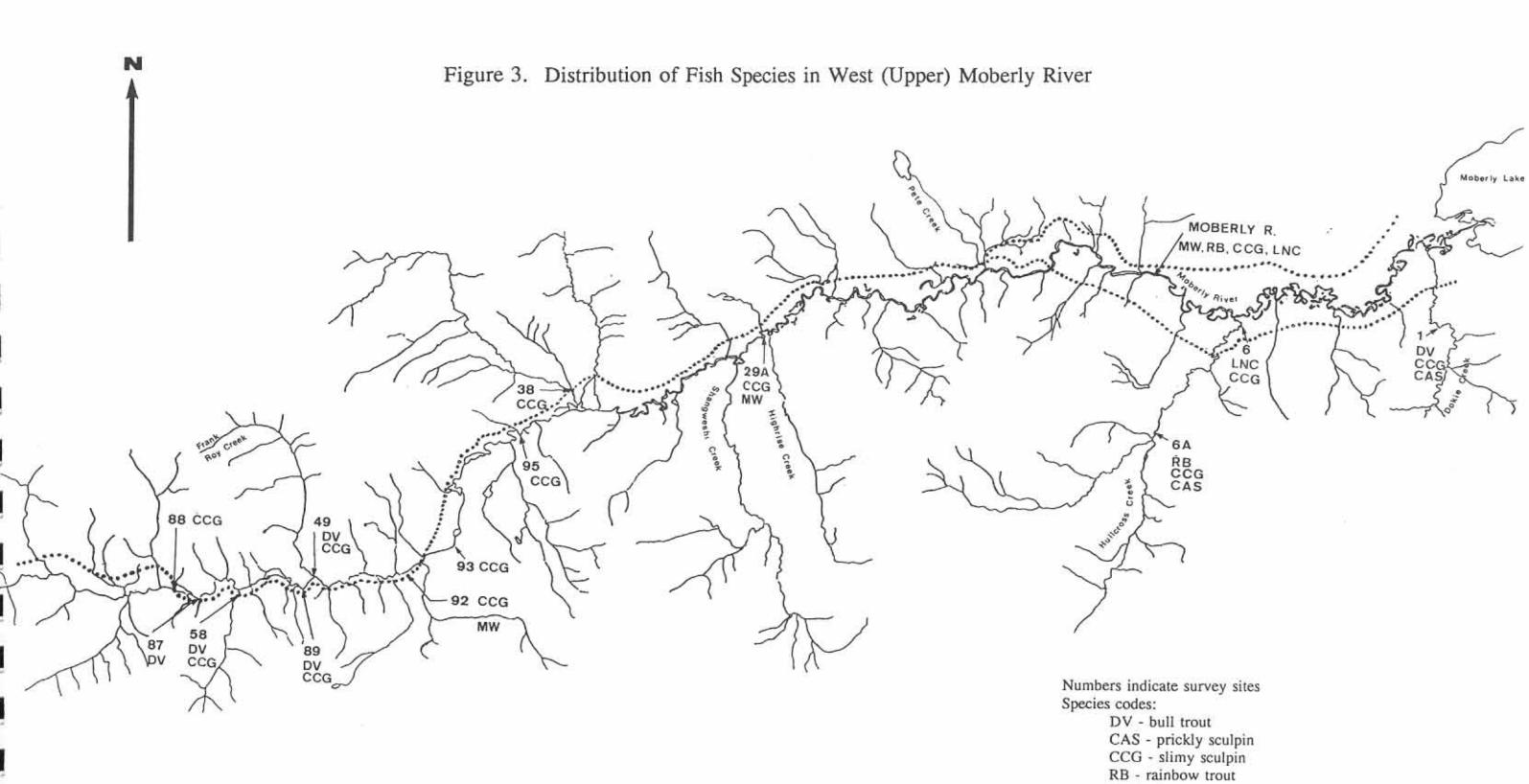
Juvenile rainbow trout were found at site 6A (Hullcross Cr.), and at the mouth of site 9 (an unnamed creek- see Figure 3), which concurs with the 1991 results identifying rainbow trout in at least 2 other tributaries of the West Moberly system (unpublished Fisheries Branch data, Fort St. John files). Substrate found at site 6A consisted mostly of gravels and larges. Cover was mainly provided by deep pools and cutbanks, with LOD and overstream vegetation being minor components.

Bull trout were found at 5 locations (sites 1, 49, 58, 87, 89; Figure 3), with the majority of these fish being juveniles. Common habitat characteristics among these sites included larges as the major component of substrate, with deep pool and larges providing most of the cover. Temperature would appear to be only occasionally limiting for bull trout in this watershed as the maximum temperature recorded was 17°C., which is still within the tolerance range of this species. In most instances, temperatures were in the preferred range for bull trout (less than 15°C.). Woody debris may be very important to bull trout but was not found in abundance at many of the sites.

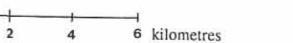
For the most part, bull trout were found in the upper half of the West Moberly, while rainbow trout were only found in the lower reaches (Figure 3). It is not clear whether this represents a true segregation or is the result of either sampling bias or the impact of previous angling/environmental pressures on the indigenous species. It is not uncommon to find bull trout occupying the higher gradient headwaters in systems such as the West Moberly as this species seems to be a specialist at exploiting cold, unproductive waters. The apparent segregation could be the result of inter-specific competition (although this seems unlikely given the apparent low densities of both species) or simply differences in habitat preference.

No Arctic grayling were found in the course of these surveys, even though apparently suitable grayling habitat was found at sites # 6A, 12, 44, 49, 58, 68, 88, & 89 (Figure 3; Tables 3 & 4). All of these sites were characterized by a prevalence of gravel and larges, however, deep pool habitat may be limiting at some sites.

Mountain whitefish were found at several sites throughout the West Moberly watershed (Figure 3) although never in any abundance. It is likely, however, that potentially significant adult



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LNC - longnose dace

MW - mountain whitefish

populations of this and other species were present in the mainstem river, occupying deep pool and other such habitats that were inaccessible to the survey techniques employed in this study. Other techniques such as snorkel surveys could be employed to get a better estimate of sport fish species distribution and population characteristics in the West Moberly system.

Several sites exhibited apparently suitable fish habitat, yet no fish were found (Table 4). This may have been due to obstacles further downstream, such as low flows, logjams, or beaver dams. Habitat present at sites 44 and 68 appeared suitable for salmonids, as a significant amount of larges were present. Cover consisted of mainly deep pools and boulders. Site 12 also exhibited good salmonid habitat (majority of substrate consisted of gravels and larges, with a combination of deep pool, boulder and cutbank for cover), however, due to accessibility problems, no electroshocking was performed.

Sites with poor sport fish habitat are listed in Table 5. These sites exhibited a combination of beaver dams, low flows (lack of flow towards end of summer), lack of cover, high turbidity, lack of appropriate substrate (gravels, larges), or steep gradients, making these areas generally unsuitable for sport fish. The majority of these sites should probably not be considered further in terms of potential enhancements.

The majority of the obstructions and resulting fish habitat loss among the sites surveyed was due to beaver dams and logjams (Tables 4 & 5). However, not all of these obstructions are necessarily detrimental to fish populations. Further studies would be required to determine the nature of the actual impact at these sites. If access to critical stream habitat, or flooding of fluvial spawning areas is demonstrated as a limiting factor, dam removal could be considered as a possible habitat enhancement, assuming resident beavers could be controlled (and if it is desirable to do so).

#### **Conclusions & Recommendations**

This study has confirmed the presence of breeding populations of several important sport species (including bull trout, rainbow trout and mountain whitefish) in the West Moberly system. However, fish densities appear to be quite low and may be in some jeopardy. Arctic grayling, which were expected to be found in the watershed, were conspicuously absent although personal communication with members of the West Moberly Indian Band indicates that this species is still present in low numbers.

Surveys on both the mainstream West Moberly and its tributaries indicated that habitat requirements for all three species were met at many of these survey sites. Juvenile bull trout and juvenile rainbow trout were noted to occupy sites with different cover and substrate characteristics. Several sites displayed suitable sport fish habitat, yet no sport fish were found, possibly due to obstructions such as logjams, culverts, and beaver dams. These sites might be enhanced through the removal of these obstructions. Future surveys should employ fish census methods such as snorkel and angling surveys at sites where electroshocking is ineffective due to low conductivity or high flows.

Site #	Name	Date Y/M/D	Comment	Temp. (°C)	Dischrg. $(m^3/s)$	Grad. (%)
1	Dokie	92/06/19	survey + EL	15	0.105	1.5
3	unnamed	92/06/16	dry			
4	unnamed	92/06/16	dry			
5	unnamed	92/06/16	temperature	14		
6	Hulcross	92/06/18	survey + EL	17	0.54	1
6A	Hulcross	92/06/18	survey + EL	11	0.58	1
7	unnamed	92/06/16	dry			
8	unnamed	92/06/17	dry			
9	unnamed	92/06/17	survey + EL	8	0.097*	2
10	unnamed	92/06/16	temperature	10		
11	unnamed	92/06/17	survey	12	0.03*	1
12	unnamed	92/06/16	survey	12	0.071	1
13	unnamed	92/06/16	temperature	11	*	
14	unnamed	92/06/16	dry			
14A	Moberly R.	92/07/29	survey + EL	15	3.0	0.5
15	unnamed	92/07/29	temperature	12		
17	Pete Ck.	92/06/12	dry			
26	unnamed	92/06/16	partial survey	9		
26A	Moberly R.	92/07/29	temperature	15		
27	unnamed	92/06/03	EL	11	*	
29	Highrise	92/06/12	survey + EL	5	0.34*	2
29A	Moberly R.	92/07/29	survey + EL	15	3.7	0.5
30	unnamed	92/06/04	temperature	12.4	*	
31	Shangweshi	92/06/04	EL	10	*	

 Table 1:
 Summary of selected physical parameters for survey sites in the West Moberly watershed.

Table 1: (con't.)

Site #	Name	Date Y/M/D	Comment	Temp. (°C)	Dischrg. $(m^3/s)$	Grad. (%)
32	unnamed	92/06/04	survey + EL	8	0.11*	4
33	unnamed	92/07/29	dripping			
36	unnamed	92/06/03	survey + EL	14	0.23*	2.5
37	unnamed	92/06/12	partial survey	5		
38	unnamed	92/06/03	survey + EL	6.5	0.93	1
39	unnamed	92/06/11	partial survey	6.5	*	
41	unnamed	92/06/11	partial survey	7	*	
43	unnamed	92/06/10	dry			
44	unnamed	92/06/19	survey + EL	10	0.28	2
45	unnamed	92/08/04	partial survey	8		
46	unnamed	92/06/11	survey	6.5	1.03*	2
47	unnamed	92/06/11	partial survey	5.5	*	
48B	unnamed	92/06/11	survey	5	0.66*	10
48C	unnamed	92/06/10	survey	6	0.06*	4
49	Frank Roy	92/08/04	survey + EL	17	0.13	3
50	unnamed	92/06/10	dry			
57	unnamed	92/06/10	dry			
58	unnamed	92/08/05	survey + EL	17	0.34	3
61	unnamed	92/06/10	dry			
63	unnamed	92/06/10	partial survey	7	*	12
64	unnamed	92/06/02	survey	6	4.62*	6
66	unnamed	92/06/02	survey + EL	5	0.59*	0.5
68	unnamed	92/08/06	survey + EL	15	0.23	5
86	Moberly R.	92/08/06	dry			
87	Moberly R.	92/08/04	partial survey	15		

Table 1: (con't.)

Site#	Name	Date Y/M/D	Comment	Temp. (°C)	Dischrg. (m <sup>3</sup> /s)	Grad. (%)
88	Moberly R.	92/08/06	survey + EL	10	0.46	0.5
89	Moberly R.	92/08/05	survey + EL	10	1.4	0.5
92	Moberly R.	92/07/30	survey + EL+AG	12	2.79	1
93	Moberly R.	92/07/30	survey + EL	11	2.63	1
95	Moberly R.	92/07/29	survey + EL	16	2.2	0.5

Note: **survey** - FHIIP stream survey form completed (Appendix A) **partial survey** - FHIIP stream survey form incomplete (Appendix A) **temperature** - temperature and qualitative flow observations only (Table 2) **EL** - electrofishing survey **AG** - angling

\* - water course dry as of 92/08/12.

Site #	Name	Date Y/M/D	Temp. (°C)	Comment
5	unnamed	92/06/16	14	small trickle (large quantities of algae)
10	unnamed	92/06/16	10	small trickle
13	unnamed	92/06/16	11	small trickle
15	unnamed	92/07/29	12	stagnant pools @ mouth
26A	Moberly	92/07/29	15	too deep to survey + EL
30	unnamed	92/06/04	12.4	trickle
31	Shangweshi	92/06/04	10	medium flow; survey completed '91
31	Shangweshi	92/07/29	15	pools, trickle + underground
44	unnamed	92/06/11	6.5	survey + EL completed 92/06/19

Table 2: Temperature (Comments on Unsurveyed Sites).

Note: No stream survey forms for these sites.

Ave. Max. Riffle/ Pool Depth (cm)	13/41	18/92	18/76	8/42	36/144	38/71	12/32	21/40
Cover (%) A R	TC20 (DP45/ 1 B20/CB15)	TC60 (DP80/LOD20)	TC30 (DP40/CB30/ L0D15/0V15)	TC35 (DP60/ LOD20/OV15)	TC40 (DP45/ 34 LOD30/CB15)	TC40 (DP50/ 3) L0D25/CB25)	TC15 (DP35/B55) 1	TC20 (DP30/ B50/L0D10) 2
Fines/ Cavels/ Caravels/ Larges (%)	10/30/60 T0 B3	30/45/25 To	5/50/45 T0	15/60/25 T0	35/30/35 To LO	15/50/35 TO LO	5/15/80 T	5/15/80 To B:
Pool/ Riffle/ Run (%)	20/45/35	40/15/45	35/40/25	40/50/10	35/20/45	20/40/40	10/75/15	10/55/35
Temp	15	17	11	8	15	6.5	17	17
Species	DV(2) CCG(18) CAS(46)	LNC(2) CCG(15)	RB(6) CCG(10) CAS(2)	MW(5) RB(1) CCG(1) LNC(1)	MW(4) CCG(1)	CCG(19)	DV(6) CCG(9)	DV(3) CCG(12)
Name	Dokie	Hullcross	Hullcross	unnamed (mouth)	Moberly	unnamed	Frank Roy	unnamed
Site#		9	6A	6	29A	38	49	58

Table 3: Habitat Summary of Sites where Fish were Found.

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Table	

Site #	Name	Species	Temp $(^{\theta}C)$	Pool/Riffle/ Run (%) Gravels Larges	fle/ Fines/ (%) Gravels/ Larges (%)	Coyer (%)	Ave. Max. Riffle/ Pool Depth (cm)
	Moberly	DV(5)	15		5/25/60		
	Moberly	CCG(1)	10	15/40/45	10/30/55	TC25 (DP45/ B25/0V10)	18/60
	Moberly	DV(1) CCG(25)	10	20/30/50	10/35/55	TC25 (DP55/B35)	25/74
	Moberly	CCG(7) MW(2)	12	15/30/55	15/15/65	TC25 (DP35/ OV25/CB20)	28/69
	Moberly	CCG(16)	11	10/30/60	10/30/60	TC20 (DP30/ LOD20/CB25/OV15/B 10)	21/71
	Moberly	CCG(6)	16	10/70/20	25/45/30	TC40 (DP50/ LOD35/CB15)	23/86

Species: CAS=prickly sculpin, CCG=slimy sculpin, DV=bull trout, LNC=longnose dace, MW=mountain whitefish, RB=rainbow trout (number of specimens found).

Cover: TC = total cover, DP = deep pool, LOD = large organic debris, B=boulder, OV = overstream vegetation, CB = cutbank

Note: See Stream Survey Field Guide (1989) for details describing subject columns.

easons Species Expected To Be Found	of Juvenile RB d chutes n	cer AG DV in large es	Juvenile DV AG	slocity Juvenile DV vnstream AG
Possible Reasons For Fish Absence	possibility of logjams and chutes downstream	elecroshocker difficulties in large water bodies	unknown	possible velocity barrier downstream
Ave. Max. : Riffle/ Pool Depth (cm)	9/19	23/101	22/37	18/42
Cover	TC20 (DP60/ B20/ CB10)	TC30 (DP70/ LOD 10)	TC20 (DP50/ B35/ OV 15)	TC20 (DP25/ B60)
Fines/ Gravels/ Larges (%)	5/35/60	20/20/60	T/25/75	T/25/65
Temp Pool/ ( <sup>0</sup> C) Riffle/ Run (%)	25/40/35	15/10/75	20/60/20	10/80/10
Temp ( <sup>0</sup> C)	12	15	10	15
Name	unnamed	Moberly	unnamed	unnamed
Site #	12	14A	44	68

Table 4: Summary of Sites with Adequate Sport Fish Habitat but No Fish Found.

Species: AG=Arctic grayling, DV=bull trout, RB=rainbow trout

Cover: TC = total cover, DP = deep pool, LOD = large organic debris, B = boulder, OV = overstream vegetation, CB = cutbank

Note: see Stream Survey Field Guide (1989) for details describing subject columns.

Habitat.
Fish
Sport
Poor
with
Surveyed with Poor Sport Fish Habitat
of Sites
Table 5: Summary of Sites 3
Table 5:

Site #	Name	Temp (°C)	Pool/ Riffle/ Run (%)	Fines/ Gravels/ Larges (%)	Dp.Pool/ LOD/ Boulders/ Over. Veg./ Cutbank (%)	Ave. Max. Riffle/ Pool Depth (cm)	Comment (problems)
11	unnamed	12	15/60/25	15/55/40	TC20 (DP55/ LOD20/OV20)	6/16	dry braids downstream
26	unnamed	6					slow, shallow + muddy
29	Highrise	5	15/40/45	5/25/70	TC20 (DP40/ B25/CB20)	20/42	dry (92/08/12)
32	unnamed	8	0/70/30	5/25/70	TC 10 (DP45/B45)	15/21	no pool, low cover, dry (92/08/12)
36	unnamed	14	5/60/35	T/25/75	TC 15 (LOD85)	21/28	dry (92/08/12)
37	unnamed	5					multiple, impenetrable beaver dams
39	unnamed	6.5				-/62	impenetrable beaver dams, dry (92/08/12)
41	unnamed	7					becomes marsh, dry(92/08/12)
46	unnamed	6.5	10/55/35	5/20/75	TC 15 (DP45/ LOD40/OV10)	26/44	dry (92/08/12)
45	unnamed	8					high fines, highly braided with low flow

Table 5: (con't.)

Comment (problems)	high fines, low flow, dry (92/08/12)	high gradient + riffle, dry (92/08/12)	beaver dam, high fines, low flow, dry (92/08/12)	shallow, high gradient, dry (92/08/12)	no pool, low cover, dry (92/08/12)	dry (92/08/12)
Ave. Max. Riffle/ Pool Depth (cm)	7/22	19/35	12/22	10/26	51/-	47/69
Dp.Pool/ LOD/ Boulders/ Over. Veg./ Cutbank (%)		TC20 (DP10/ LOD40/B45)	TC65 (IV10/ OV40/CB40)		TC<5 (B100)	TC40 (DP45/ LOD35/CB10)
Fines/ Gravels/ Larges (%)		T/10/90	85/15/0		T/5/95	65/35/
Pool/ Riffle/ Run (%)		5/90/5	10/15/75		0/100/0	5/15/80
Temp (°C)	5.5	5	9	7	9	Ś
Name	unnamed	unnamed	unnamed	unnamed	unnamed	unnamed
Site #	47	48B	48C	63	64	66

Cover: TC=total cover, DP = deep pool, LOD=large organic debris, B=boulder, IV = instream vegetation, OV=overstream vegetation, CB=cutbank

Note: See Stream Survey Field Guide (1989) for details describing subject column.

# APPENDIX A

West Moberly River Stream Survey Forms with Corresponding Photographs

				STREAM SURVEY FORM				
tream Name (gaz.)	okie	Creek	3	(local)		Access	V2	Metho
Vaterahed Code 213					HERE'S AND	Lengthikm)		
Bation Drumstr	eam	of Berry	uda	m Meer 73 P	13 BIL DOS 1	Linsurv(m)	100 ,	GE
(~ \$00m dos	whstr	term of	rao	(1055129) U.T.M. 120	7-61519 41100110	N C	EGIC V2	HAT
ALL YMO. 9 2016	1191	13:10	Agency	FJ GH /HH/ Photos }	1-2-3 Air Photos		11	
PARAMETER		VALUE	METH.	SPECIFI	C DATA	(i))	isriiu/si	TIONS.
AVe Chan Willin im		10.7	T	11.3, 10.2, 12.3, 8.8, 11.1		0.	Stinor Typ	H Loc'
Avenues participation		4.6	T	5.2, 5.1, 6.2, 3.7, 2.7,		2	2.5 BI	
Ave.Max.Riffle Dept	h (cm)	13	MS	18 10:11.11.15		1		
Ave.Max.Pool Depth	(cm)	401	MS	69,40,29,37,28		1800 B		1
Gradlent Stanty	E	1.5	CL	C. BEDMANERIAL	C BANKS	120		
1 8 Pool 2 0 00 4	E Aun Z	5 Diner	KE.	Clay,sill,sand (<2mm)	Height(m), 5 %Unsta	ible ZO		
Bade Chan Als of	Mail In	40 >40	GE	amali (2+16mm)	D Texture F GY	L) R 2		
	In IVE	-10 210	GE	Iarge (16-64mm)	2 Confinement	EN CO FC	oc (	D N/
Debris Stable %		5	GE	am.cobbie (64-128mm)	30 Valley: Channel Ratio	0-2 2-5	5-10 (10	·)NII
COVER: Total %		20	GC	Ige. cobble (128-256mm)	20 Barris Contention of the	Dry L	(M) H	Floo
Comp. Dp Pool L.O.D.	Bouider	In Veg Over Veg	Cutbank	A REAL PROPERTY AND A REAL	0 3 Flood Signs Ht(m)	. 67 Braids		N
100% 45 10	20	T 10	15	Proposition and the second second	Bars (%) 11)	pH	Osippr	
Crown Closure %	5	Aspect	W	Deolom) 42 Pt Compaction L (M	H Water Temp. (*C) 15	urb.(cm) 40	Cond.(25*)	C)
	-	DISC	HARGE		REAC	H SYMBOL		- duce-
Parameter	Value	Method	1	Specific Data		(Fish)		
Wetted Width (m)	5.6	T	5.6	1,59,59,53				
Mean Depth(m)	-1	M5	15.1	0.6. 0.08,0.09,.12				
Mean Velocity (m/s	257	Jom F	41511	9434/10/ 396/10/124/1032	110			
Discharge (m <sup>3</sup> /s)	.105	James E		1 ( 1 1 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1	Width.Valley:Channel,Slope)	1	Bed	Materia

The and the second	
	( <del>-</del>
COMMENTS COMMENTS COMMENTS Concerns Reparation Zone Valley Wall Processes	Etc.
Aloge cover vorks but die viet gvorde wuch cover for	Reh
& Bearerdam ~ 200m downstram a und bridge	1 1992
May be praidled during periods of higher thou	
I survey le sempres difficult de distinguish al prickly or s	slimy
	1
	lakor
-3-log jan @ lower end ) 12/08/12; flow (255.	is considerably
	Edited by:

#### DFO/MOEP STREAM SURVEY FORM



Site 1; Dokie Crk. (Beaver dam at top end of reach)



Site 1; Dokie Crk. (Logjam at lower end of site)

See. 1
1
1
- 27
- 7.4

) DFO/MOEP STREAM SURVEY FORM

			STREAM SURVEY F	URM	1000 C		_		
(am Nime (gez.) /fill	land		(local)				Access	V2	Metho
lershed Dode		i l i		1 Li	1 ALCORNER	1	engthikm)		
cation ~ 300 m	upshe	am	From Simple Moore G	3-0/16	and the second of	GA	in all the	100	65
w(m)	1.		U.T.M. 10	5622.6	794 1212 49 130	( N	C	FIGHA	
1310 P12 06 11	300/0:35	AG	FS GH GH/HH/ Pha	stos	Air Photos				
PARAMETER	VALUE	METH.	SP	ECIFIC DA	TA		19.97	. (****tele)	TIONS
Availation	12.5	T	5.9,12.3, B. A. 2	-1.9,	10.8		C	Ty	pe Loc
Average And Andread And Andread	6.54	TK	36,75,4.8.7	514	2		~	,4 R	)
Ave.Max.Riffle Depth (om	190	MS	23.78, 16,11,13	1.0			30		
Ave.Max.Pool Depth (cm)	765. 1	MS	125,43,45,66,1	03			186		
Gradient S 400		CL	C BED MAHERIAL	%	C BAN	IKS	<b>老</b> 派		1
18 East 2, Caller 40 Rul	2500	GE	Diffet clay,sill,sand (<2mm)	5 5	Height(m) 577	& Unstable	35		
Level de la	10-40 240	66	small (2-16mm)	15	Texture (.F	GL	R S		
1 2 Day 2 Day	10 18 18 18	1.E	Graves large I16+64mml	35	Confinem	ent EN	O FC	00 (	JC) N/
Stable %	26	1920	sm.cobbie (84-128mm)	405	Valley: Channel	Ratio 0	-2 2-5	5-10 (10	+) N/
COVER: Total %	30	GE	1.1.1.1.1.1.1ge. cobble (128-255mm)	5	Section 1860	Dia D	ry (L	MH	Flo
Comp. Dp Pool L.O.D. Bouk	ler In Veg Over Veg		boulder (>255mm)	TE	Flood Signs H	(t(m)	6 Braid	ed Y	(N)
100% 120 15 N	015	301	I IN MOCK (ALC: 141		Bars (%)		H	0.jpp	m)
Grown Closure % 5	Aspect	N	Depicmi L Om Compaction	LAM H	Water Temp.("C)	11 Turb.	(am) 103	in the second	_
	DISC	HARGE	Repet to 11 Depent		5651	the second second	SYMBOL	π.	_
Parameter Val	ue Method		Specific Data				shl		
Watted Width (m) 5	5 T-	5.6.	5.6.4.4. 54,65						
Mean Depth (m) D.	3 115	56	431.181.171.16.						-
Mean Velocity (m/s)	Contraction of the local division of the loc	7.95 M		84/10					
Discharge (m <sup>3</sup> /s)	1	auto	the detre holes that		Vidth,Valley:Channel,	linnel	1	Par	Materia

$\begin{array}{c c} \hline \hline \\ $	L STREAM/VALLEY CROSS-SECTION D (Looking Downstream) PLANIMETRIC VIEW
	Stewart and the second se
	COMMENTS Destructions , Riparian Zone ; Valley Wall Processes , Etc. and end of the Gife Strongen doubt and Stream of site (some enderce white site).
Some Fizh were fathen ( f	preserved) Erom this size.
	Edited by: Dete Y M D:

1.1		_				-	STREAM SURVEY FORM		
Strea	m Name (gaz	in H	1APLC	10	55 (	nee	2 (local) Access		Metho
-	shed Code	1	1	11		1 1	Length(km)		
dest	lion a 20	the	500	~	ters	Fro	- north Mape 93-P/13 61100 6 410000	75	GE
6	access b	n d	) (c.	A	4120	=k)		Field	
1000	YMD 92	016	18		4:30	Adency	FJ Crew Gr /AH / Photos Air Photos	A Second Triblaga	00008340
C	PARAM			VAL		METH	SPECIFIC DATA	STRUCT	ONS
10	ve.Chan.Widt	n Armu		18.	4	T	23 15.8 19 18 63	Him! Type	Loc
	we wo where	(m <sup>*</sup> )	的复数	2	3	Ť	7.5 8.6 10.1. 6.9. 7.7	₿v	
A	ve.Max.Riffle	Depth	(cm)	14	2	MS	30, 14, 11, 12, 23		
唐 A	ve.Max.Pool	Depth I	(cm)	90	2	MS	63, 101, 110, 118, 67		
9	(adient %		100	1.	1. 	CL	C BED MATERIAL % C BANKS		
1	1840 0	15	14 H	50	in the second se	68	Finas clay, all, sand (<2mm) 70 3 Heightim) 55 % Unstable 55		
0.6	Sec. 2	otto	510 10	40	ProC.	BE.	small (2-18mm) /5 Texture (F G) L R		
	sene 1	600		-16	拉口	GE	Grevels large (16-64mm) Continement EN CO FC	oc (ub	) N/
	Stable 1	K 12	0D			GE	am.cobbie (64-128mm)	5-10 (10)	N//
	COVER: Tot	al %	60			GE	Cirro ( 8 Ige. cobble 1128-256mm) T	-M H	Floo
C	omp. Dp Pool	L.O.D.	Boulder	In Veg	Over Veg	Cuthenk	boulder (>258mm) T Flood Signs Ht(m) 97 Braide	a Y C	R)
	100% 80	20	0	T	0	0	Bars (%) O pH	Oglppm)	
il c	rown Closure ?	6	0	の	Aspect	N	Deolemi 11 See Compaction L(M) H Water Temp. (*C) 17 Turo, tem) h(d)	Cond (25*C)	
					DISC	HARGE	REACH SYMBOL		
iπ.	Parameter	t.:	Value	M	lethod		Specific Data (Fish)		
W	etted Width	(m)	8.2	1	Í	10.3	8.3 7.2, 7.9, 7.1		
Him Ma	ean Depthim	}	0.25	1.41.	15	45,	1,52,15,19		
M	ean Velocity		0.35	and the second sec	(Sm)	28	27 33,28 7		
Di	ischarge (m <sup>3</sup> )	(5)	0.54	1.00			t (Width,Valley:Channel,Slope)	(Bed M	ateria

FISH SUMMARY	ECTION
C Species No. Size Rangetimm Life Phase Use Method/Ref. U (Looking Downstream)	R
LNG 2 100-113 J-A R EL	$\Box$ , $\dashv$
CCG 15 36-70 J-A R EL	_{L -
	~ 7
Lop	
	silt
	comes
	7
	10000000-
COMMENTS	
Channel Stability, Debris Management Concerns, Obstructions, Riparian Zone, Valley Wall Prov	cesses 🔲 Elc.
Diversit delaris is large	
2 2 all broken beaver day -> water is free flowing through	(not obtructive pressil)
Thinks covering yest of growels + apples - this by no blag	at the
A Electroshocked to	
	and the second second second
	Edited by:
	Date Y.M.D

# ) DFO/MOEP STREAM SURVEY FORM

				STREAM SURVET FORM		_	
Stream Name (gaz.)	inne	mea		(local) Acc	955	12	Metho
Watershed Code 23	the second second second	And and a state of the state of	15 1	Lengt	h(km)	~	
ocation From	C. LA	ert t	30	noters Jour Mape 93.0/16 Site No. 9 Litrey	y.Imi	300	
afream				U.T.M. 10-5609-61838 FULIGING 1 N	C I	eld Da	Hist.
MEYMD 9120 16	1171	Tme [1:2.0	Agency	ET Crew HA GH / Photos #2-17-18 AL Photos			
PARAMETER	٩	VALUE	METH.	SPECIFIC DATA	(OBS	TRUCT	QNS
Ave.Chan.Width (m)	io trakely	5.3	T	6.6 4.4, 4.8 5.6 4.9	CH	Type	Loc
Ave.Wet.Width Iml		3.3	T	5.1.8,26'40'3.9	3 .	5 CV	
Ave.Max.Riffle Dept	th (em)	8.3	N	9,77,7,B	4	X	
Ave.Max.Pool Dept!	n (cm) <	12-00	ny	65, 35, 37, 31,41	5	BD	
Gradlent %	Same -	2	4	C BED MATERIAL % & C BANKS	3.7		
% Pool 4 D Ruttie 5	ORUN	Other	GE	Finas clay, all, sand (<2mm) Heightim 20 %Unstable 20			
Side Chan % 9	0-10-10	-40 40	60	Graves small (2-1.8mm) Texture F G L R			
Area% o[	]0-5 [] 5	-18 7>15	GE	Graves large (15-54.mm) Confinement EN CC	FC	oc (u	) NI
Stable %		15	GE	Sm.oobble (64-128mm) Valley: Channel Ratio 0-2	2-5 5	10 103	> N//
COVER: Total %		35	GE	Earges Ige cobble (128-256mm) Stage Stage Dry	(->	М	Floo
Comp. pp Poor L.O.D	Bouider	In Veg Over Veg		boulder (>258mm) Flood Signs Ht(m) 3.7	Braided	$\odot$	N
100% 60 20	0	0 15	5	Bedrock (R) Bars (%) 15 0 pH		O <sub>2</sub> (ppm)	U
Crown Closure %	40	Sit Aspect	5000	Deolom) 14 Compaction L (M) H Water Temp. (*C) 8 Turb. (cm)	65 0	ond (25*G	1
		DISC	HARGE	REACH SYM	BOL		
Parameter	Value	Method	l	Specific Data (Fish)			
Wetted Width (m)	3.5	7		5 2.5 3.9			
Mean Depth (m)	.10	ms	.07 1	× .1 .11 .15			
Mean Velocity (m/s	1-37	F	D I	18,15 13			
Discharge (m³/s)	.097		1	A Width,VaileytChannel,Slopel		(Bed )	daterial

## DFO/MOEP STREAM SURVEY FORM

COMMENTS Channel Stability Debris Management Concerns D. Obstructions D. Riparian Zone D. Valley Wall Processes D. Etc. Prom culvert to first obstruction (old lon jum) Aspect sin C site had changes just below to E Calvert Q top of site had changes just below to E Calvert Q top of site had anall drop a jum D buttom of site Dold - falling apart rothing multiple house dones and been stream Construction on the broad D bus has unget on photos #2-17 locking downstream real culvert	RS CCG L-NC	5	1919-15147 Size Range(mm) 109 - スネタ 1 20 208 8 7		Use R R R	ES ES ES ES	STREAM/VALLEY CROSS-SECTION
Declivert @ top of site has small drag be in a jun a bottom of site -> old - fulling uport rolling multiple barrier downs institutes down stream. 6 dd bar now trind into braid -> bar has various on a photos #2-17 loding downstream was colvert	Q F	10-	culvert	to fi		Concerns[	, Obstructions , Riparian Zone , Valley Wall Processes , Etc.
- 19 month of creek where all fish caught - much Edina by		icilia va	ert Q	the de the trind	de la	à han site - la produce la produce la produce la produce la creed	Sold - falling apart nothing Sold - falling apart nothing Sold - falling apart nothing Sold - falling apart Sold - falling apart



Site 9; unnamed (Looking downstream from culvert



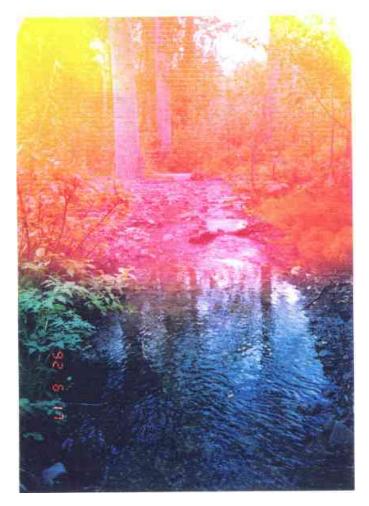
Site 9; unnamed (Logjam at downstream end)

and the second se				STREAM SURVET FORM			
Stream Name Igaz	1 uno	aned		(local) Acc	855 N	12	Metho
Watershed Code	2131012	141419121	1311	Reach No. Lengt			
Chernel and the second	eters	downs-	1	mm m Mape 93 0/16 Station 11 Line	sim:	50	SE
				U.T.M. 10-5592-61854 Pinticard, Y	C		fist.
Date YMD 912 0	516117	Time 13:45	Agency	Fy Crew HA /GA / Photos 2-20-2) Air Photos	100000000		-218-015-
GE PARAME	the second se	VALUE	METH.	SPECIFIC DATA	SOB:	TRUCTI	ONS
Ave Chan Widt	1 (m)	4.5	T	3.7 4.5 4.4. 3.9 6.6	QR	ton Type	Loc'r
Ave.Wet.Width	(m)	1.7	T	17 11 21 11 1.0	· .	5 X	
Ave.Max.Riffle	Depth (cm)	6.2	m5	4 7 8 6 6	Ē.	5 CU	
Ave.Max.Pool D	Pepth (cm)	16.4	v15	12, 4, 18, 24, 19	2		
Gradient %	Hark ( Kal		GE	C BED MATERIAL	T <sub>el</sub>		
Rittle	6 0 Run	1_Other	GE	Fines olay, sill, sand (<2mm) 15 Height(m) 2 %Unstable 15			
13 Side Chan %	0 0-10	10-40 >+0	GE	Graves small (2-15mm) 20 Texture (F.G. L. R.	1990 Talah		
Area%	00-5	] 5-15 [X 15]		Large (16-64mm) 55 Confinament EN CO	FC	oc (uc	DN/A
Stable 5	6	5	6E	am.cobble.i54-12amm) 30 Valley: Channel Ratio 0-2	2-5 5	-10 (10)	N/A
COVER: Tot	al %	20	GÉ	La los Ige cobbie il 28-256mmi () Dry Dry	G	мн	Floor
	L.O.D. Bould	er in Veg Over Ve		Flood Signs Httm) 26	Braided	0	N
100% 65	20 /	1 20	h	Bedrock (R)	2	O_lppm1	
Crown Closure %	w w	Aspec	N	Deolom) 18 Compaction L M H Water Temp.(*C) 12 Turb.(cm)	14 0	ond.125*C)	
			CHARGE	REACH SYM	BOL		
Parameter	Valu	e Method		Specific Data (Fish)			
Wetted Width (	m) [.9	F AT	1.7	3, 1.3 1.4 2.4			
Mean Depth (m)	. 10	ms	10,	2, 17, 18, 06			
Mean Velocity	(A/s) .2	7 F	22	18 17 18 19			
Discharge (m <sup>3</sup> /				Width, Valley: Channel, Slope)		(Bed W	(initeth)

)	DFO/MOEP
	STREAM SURVEY FORM

(

C solution No. Size Range(mm) : derblin to Use Minimov/Reff L	M/VALLEY CROSS-SECTION
streen too shall to ES	1
	-
COMMENTS	
Channel Stability Debris D. Management Concerns Dostructions Riparian 2	one [], vaney wan Processes [], Etc.
() appert appren by room	3.4
2 A stream brails downstream + each braid	dues up
3 3 exposed he material below reach	
	- [
ploton 2-20 - looking downstream @ Survey	SUD
21 - bokny & log jam on upsto	an crus
	Edited by
	Date Y M D



Site 11; unnamed (Looking downstream at survey site)

#### DFO/MOEP STREAM SURVEY FORM

Str	Stream Name 1992.1 UNN QMED CIER HOCALL ACCE								CESS	V	2	Methor						
Wa	stershed Code 230 744	SITI			6.3	104.64	Vez m Dia	(internet)	1	U.	Read	h No.		Leng	thism			
_	cation 10 m wash		Ba	im	m	outh 1	Мар#	12-	-	16	Site	A	12	Ltha	urv.(m	125	ñ. I	GE
	4	-cont	- 1.41	Sec. 1		d. Tranke Lineard	U.T.M. 10	.55	98.6	1 84	5 Flat	Card	¥.	(N)	C	Field	y.	Hist.
Dat	to YMD 012 UIGI 10 Time)	5.18	Agency	5-	Crew	BP Att	/ Ph	0101	117	- 141	S AIT F	hotos		-				
C PARAMETER VALUE METH. SPECIFIC DATA							i.				140	BSTRUCTIC		ONS				
	Ave.Chan.Width (m)	2.	T	T 6.9, 3.2, 3, 3, 4.3, 3, 3, 3							C	Hilm	Туре	Loc'r				
	Ave.Wet.Width Im) 2.	T	2.	7:17	1.4.2.	312.7								3				
	Ave.Max, Riffle Depth (om) 8.6 MS 10, 1, 1, 9, 10																	
	Ave.Max.Pool Depth (cm)	2	MS		251	20,161	21.17	1				_		_				
	Gradient %		CL	C	) B	BED MATER	RIAL		b.	C BANKS								
	% Pool 25 Rithe 4 DRun 3 50	ther	GE		Fines	clay, sill, sand	(<2mm)	5	药	Beightimi 36 %Unstable 15								
1	Side Chan.% 000-10-10-40	]>40	GE		1000	small (2-1.6m	im)	10	15		Textur	F	6)	B R				
2	Debris Area% 000-5 5-15	>15	Cit	Graves				Confinement EN CO F					C OC UG N/A					
L	Stable %	2	15#	18.8 31.1	- wat	am cobble (64	-128mm)	10	40	147	Valley:	Chann	nel Ratio	0-2	2-5	5-10	(10)	N/A
2	COVER: Total % 21	D	GE		Larges	Ige-cobbie (12	28-258mml	15	15	16	্র (লাহ	shie		Dry	D-	⇒(M)	H	Floor
		Over Veg			Contract.	boulder (>255	Smm1	5	5	4	Flood	Signs	Ht(m)	0,25	Brain	bed	Ø	N
R	100 GU 5 20 0	5	10	1.2	Bedroc	k (R)	A Statist	The	-		Bars (	61	0	pH		0	(mage	
1525		Aspect	5	で見た	Deolom	250	Compaction	LQ	MAH)	(Å.)	Water Te	mp./*Cl	12	Turb.lem1	21	Cond	125*0	
Δų	DISCHARGE								1			REAC	CH SYN	ABOL			<i>.</i>	
	Parameter Value N	Nethod	Specific Data						(Fish)									
ėć,	Wetted Width (m) 2.5	1	2.0, 2.2, 2, 4, 3.0, 2.9															
Ğ.		15	- (DI, 10, 0, 0, 0, 0, 0)						1	0.000								
麝	Mean Velocity (m/s) 0 42 45	im)F	175,	12	'5,0'	5, 1200	195											
微	Discharge (m <sup>3</sup> /s) 0.071							(Wid)	h.Valley:	Canna	al,Slope)	<u>es</u>			IBed N	(aterial)		

STREAM/VALLEY CROSS-S (Looking Downstream)	
G Sprcies No. Size Range (mm) Sha 27637 Use Million Parts L	R
PLANIMETRIC VIEW	N/7 N/ -
NO EL Jones Jim	
1999	
WE HAVE	C at ki ki ki lark
FEEL	新班任
f the second sec	
598050000	
	_
COMMENTS	
📸 Channel Stability 🛄 Debris 💭 Management Concerns 🛄 Obstructions 🛄 Riparian Zone 🛄 Valley Wall Prov	cesses 🔲, Etc.
I some side channels, upstream - downsteam of	arren ste
of some conjams up + alownistream of other	0
3 Some moutor logienne + climbes downstream of rea	sta sile
P Monor braids ( triflicles) + dry bravide	9
#2-1415-7 14: Looking downstream (a) month w	whe creek
in the solution of the state	en site
5 NOTE: Gaver voad no 1855 Sketched in on me	100220121
and the states of the second with the	F-130-16.
	Edited by:
	Date YM D



Site 12; unnamed (Looking downstream from survey site)



Site 12; unnamed (Mouth where creek joins braid of Moberly)

		STREAM SURVEY FORM		
Stream Name loaz. Mob	as) u	llocal)		Access 1 / Metho
Watershed Code	11/111	and had not all to the	Reson No.	Lengthikm
- distinguishing and the destine	sen up	strem of MARP 93-0,	16 SILL NO LAA	LINDUCION 100 GE
biidale		U.T.M. 10.5583.	61839 月16日 9 (	
DATE PM 2 4 12 01 4 219	100 10:15 NO	Nev FJ Crew HU /3 14/- Photos H-	-1-5 Air Photos	
C PARAMETER	VALUE ME	TH. SPECIFIC I	ATA	OBSTRUCTIONS?
Ave Chan Width Im	37.8 T	40.2 46.9 37.1,	30.3 28 5	C Sim Type Loc'r
Ave.Wet.Weldorm)	20.0 T	23.2' 23.7 19.7,	18.3,15.8	
Ave Max Riffle Depth (cm)	23 M	C 21, 22, 18, 34, 18		
F Ave.Max.Pool Depth (cm)	101 1	6 128, 124, 75, 704, 7	3 .	
Gradien	.5 C	C BED MATERIAL	C BANKS	潮
Pool Shine   Ohin7	Gother G	E Eines clay,sill, sand (<2mm)	Height(m) 47 %Unstabl	le 20 2
1 Bide Chanses   0 0 0	140 >40 AG	small (2-16mm)	Texture (E) G &	S R 図
Arean Solorsin	STIST 215	Graves large (15-54mm)	Gonfinement I	EN CO FC OC UC N/
Depris Stable %	15 G	e sm.cobble (64-128mm)	Valley: Channel Ratio	0-2 2-5 5-10 (0.) N//
COVER: Total %	30 6		34. 19 13 (A)	Dry L M H Floo
Comp. pp Pool L.O.D. Boulder	In Veg Over Veg Cut	AM SEA CHENNELD	Flood Signs Ht(m)	62 Braided Y (N)
100% 70 10 5	10 5 1	(C Bureaster)	Bars (%) 15	pH O_(ppm)
Crown Closure % T	Aspect #	Dan(cm) 76 Pro Compaction L @H	Water Temp.(*0) 15 Tu	rb.(cm) Cond.(25*C)
*	DISCHAF	GE	REACH	H SYMBOL
Parameter Value	Method	Specific Data		Fishl
Wetter Width (m) 155	TIP	5,4 15.2 15. 15.8.16.7		
Mear Depth (m) _ 0.9		8 159, 119, 85 '80, 37		
Mean Velocity (m/s) 0.2	and the second sec	5' 30' 29, 32 44	]	
D.scharge (m <sup>3</sup> /s) 3.0		1 1 1 1 1 1 1 1	Width,Valley:Channel,Slopel	Bed Materia
				REVISED DEC. 87 851

3	9	)	DFO/MOEP		
		S	TREAM SURVEY FORM	M	

1 to	and street	動物		and the second se	MARY		Method/Ref.	1		STRE	AM/VALI (Lookir	LEY C ng Dow	ROSS	-SECT	ION			2 1
2	pecies	NO.	SILE Ha	ព័ត្ធទំណាល	Life Phase	Use	Method Hel,	Lt		PLAN	IMETRIC	VIEW	1			1		25
	ES	6	1 +	ma	A.A	14	laht	fort									$M_{\rm e}$	
					1.2.2		-7.	生し										1.4.45
_		_						- 1 1										
•		_						E/. '										
-			_					. Store	6						2.		1	
-		-				-			المتنبق						20	de-	2	
-		-							1	~	~							
-		-					1000	_			-		10	~				
1		-				1		CO	MMENT	S			24.5		-			
C	hannel	Stab	utity [].	Debris		nama	t Concerns		CALL STREET, ST		Zone .	Valley	Wall P	rocesse	es 🗍 .	Etc.		
-		1	+	1 . 6			hin 1	town		un	1			1				1.
	6		115	10 -				ALC BULL										
i 6	f		res	4 3	1-27		1	4		1	itre		H	Ę,	hr. d	aP.		
1	f		AAS_	K 0	ter 1			4		Jon	itre	A	н	ú	b. d	<u>a</u> ę.		
	e sli	ab	t I	A d	just	od.	ream	4	4.7.4	20ma	t.	~~~;	н	ú	b d	<u>a£</u> .		
	ج جار	zh	W.L.	Orein	Visit - The	25	ren-	4	anje	y si	stre t	~~.	н	ú	b à	<u>a</u> £.		
	f sli sid	gh	W.L.	orein an n	Visit - The	25	rea-	4	anje	y si	ștre ț	a	н	ũ	b d	<u>a</u> £ .		
	shi sid	gh e	ch	ann	Visit - The	25	rea-	4	anje Ilv	y si	t. de	24			by d	<u>a</u> £ .		
	shi sid no	gh e st	ch		0	25	ream	4	anje Ily	y si slow	istre t	00	H Th		b à	<u>o</u> £.		
	sli sid mo,	gh e	ch	ann	0	29	ream	4	arre Ily	y si slow	istre t	ep	H FL					
	sli sid mo	gh e	ch	ann	0	25	ream	4	ny.	y si slow	istre t	ep	н П.,		Edned Date Y	Dy		



Site 14A; Moberly R. (Looking upstream to top end of site)



Site 14A; Moberly R. (Looking downstream at site to bridge)

횗	(an Name (gaz.)	unn	ar	mec	Ľ		_	11	llapo									Acc	055			Metho
Ľ	htershed Code 2	3101	7,41	11813	17	111	1	110	1 2 10	L B E	1. 1.	I.	N. R.	Reach	No.		Le	engt	h(km)			
1	follion nou	3.0	~	300	×	~	-	Strea	~	Мар#				Site N	o. ?	26	L	hsu	(m).v	-		
-	From per	1 3.90	4	6 170				meb	esty.	U.T.M.	10-551	2.4	6182	Fish C	ard	Y	N	)	C	Field		Hist.
i.	YMP 9 2 01	611	, Tim	0		Agency	F	Crew	HE AG	#/	Photos -	2- 1	2	Air Ph	otos						1000	
C	The second se		V	ALUE		METH.					SPECIF	CL	ATA						×0	BSTR	UCTI	ONS
i.	Ave, Chan. Width T		ř.																C	Htim	Туре	Loci
y.	Ave.Wel.Width Im	法部分				_														delat, pe		
i.	Ave.Max.Riffle De	pth lon	17									_							- 1			
軍	Ave.Max.Pool Dep	and the second	-																	1		
3	Gradient N.	and the local division of the local division	and the second division of the second divisio				C	臺武	BED MATE	RIAL	16 %	6	C		BA	NKS			-			-
È.	ALOSA PULLE	Run		Other			100	Fines	clay.sill.san	d (<2mm)	laks.		-	Haight(m)		%Uns	table					1
2	Side Chan.S	]o-so[	10-40	0440	口劉		1	Gravel	smali 12-16	imml	100	111		Fexture	F	G	L	8	(The			
2	Atea# 0		To a	□>\6	」夏			CONVER	large 115-6	4.mm)				Cor	finen	nent	EN	CO	FC	OC	UC	N//
÷,	Stable %		N				論		sm.cobble (	64-128mm			- 14 A	alley: C	anne	I Ratio	0-	2	2-5	5-10	10+	N/A
N.	COVER: Total	*					通知	e desfri	iga.cobbie i	128-256mi	n)		(XE)	Sec. S	age	1	Dr	y)	L	М	н	Floo
and a	Comp. Op Pool L.C	.D. Bout	der In \	revO ge/	Veg	Cutbank	题	Sec. 12.	boulder 1>2.	56mm)			2.99	lood Sig		and the second		1	Braide	d	Y	N
No.	100%						J.	Badto	18 (R) - 10-				1	Bars (%)			ph	1		04	ppm)	Ì
4	Crown Closure %		G	Aspe	ot			Deolem	C	Compacti	on L M	H		Vater Temp	(90)	9	Turb, ic	m		Cond.(		1
				DI	SCH	ARGE		1 1 1								REA	CH S	YME	JOL			-
	Parameter	Val	ue	Method	t.			Spe	cific Data							121117-0406	(Fis)	h)	0.000			
i.	Wetted Width (m)					100																
	Mean Depthim)		1											-							_	
	Mean Velocity (m)	<b>\$</b> ]																				
	Discharge (m <sup>3</sup> /s)					10.00							Width	Valley:Ch	annel.	Slopel	64			-10	Bed M	atoriali

AISH SUMMAP	L PLANIMETRIC VIEW R L PLANIMETRIC VIEW -
MS	COMMENTS ]. Obstructions []. Biparian Zone []. Valley Wall Processes []. Etc.
- very slow moving - comes grazing around 1 photo 2-12-7 view of month	crossing causing v. muddy water
	Edited by: Date Y M D



Site 26; unnamed (View of mouth)

The Party of Street of Street,				311	ACAM SU	JRVEY	FOHM		_				1 19		
eant Hame Igaz.	34	NBE CI	2eL	1	locall						A	ctess	V-	-	Metho
Code 2	21714	415 718	191.1	1113		11	1 11	11	Reach	and the second s		gthikm	in the second second	_	_
Veren Vear po	ulil	anes	(almi	t loom	downstre	Map#	93.0	116	Stern	and the second	1 Losan	survim	50		GE
AND A CONTRACT OF A		ر. محمد جا الحال		200			0.549		the second s	1011027-24	(N)		Floid	日記	加切
MP1912016	121	mie 12:30	Addition of the local division of the local	FJCre	GH /H	terrine and	Photos &	_	Air Ph	otos		1.000			
PARAMETER	24.25	VALUE	METH.	514	2.75	S	SPECIFIC	DAT.	4		_		BSTR	1000-2000	
Ave Chair Will h (m)	1000	8.08	1	1.17.	21.67	7.3	69		-	-		C	Fitim)	Contract of State	Loc
Ave.Wbi.Width (m)		3.62	1.12	2.9,2	2140	14.2	2.5	-	_			1	1	×	-
Ave Max Rillie Depth		9 20	MS	19,2	5/18/	IBIL	$\mathcal{D}_{-}$	_			_	-			
Fre Ma., Pool Depth	(cm)	46 42	MS	38,3	445,4	452	F9E1 (	1.4				_			-
Gradient %' 2	11	2	CL	C	BED MATE		6 %	C	1.1.1.1.1.1	BANKS		-			-
15 Att 4 (	)理题[1]	SOther	GE	(Fines	clay, silt, sao	Section 1		5	Height(m)	The second secon	istable 3/	6/11 mm	-		-
The second state of the se	and the second second	42 230	GE	Grave	small (2-16	2017/02		2	Texture	(F) G	(D) F	A 424-		-	
States and States and States	128 LUS		GUE	13 10 15	large 115-6		I		Z	nfinement		CO FC	-		) N/
Stable %		50	GE			64-128mm1		之基	Valley: C	hannel Rat	ALC: NO	2-5	-	~	N//
COVER: Total %	. I.,	2.0	GE	a duna		in the second		20	· 经合注注	把你当时,这	Dry	L	M	H	Floo
Sum Dp Pool L.O.D.		in Veg Over Veg			bouider (>2)	56mm)		5	Flood Si	gas Ht(m	.80	Braid	bd	Y (	(1)
100% 4D 5	25	010	20	11120 11520200	OCR (A) . A	and See Lines		0	Bars (%)	distant in the	pН	1	_	(ppm)	-
Crown Closure %	5	Aspect	IN	n D <sub>90</sub> lc	m) 30 8	Compactic	on L(M)	H	Water Tem	10 5	Turb.lom	52	Cond	(25°C)	
		DISCI	HARGE					_		RE	ACH SY				
Parameter	Value	Method		5	pecific Data		<i>i</i>				1111				
Wetted Width (m)	3.12	T	4.2,	29	3.1,2	182,1	61	_			-				
Meag Depth (m)	125	MG	.23,	.28.2!	4.9.21	3									
Mean Velocity (m/s)	.58	F	17.2/	10,23.3	10,20.81	10,14.4/	10,13.9	ho							
Discharge (m <sup>3</sup> /s)	.34		14 U	S. 62 - 13	1979 S. 1	i Meo milis	29.C - 18	(W)	dth.valiey(G	nannal, Silop	e.			IBnd M	nteria

	SUBJUE No. Size Range (mm) LIC (P) (2) Use A(1)(0) (1)
-	COMMENTS
-	Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc.
T	~200 m dawnstraw from where sideward orbies creek (user provines)
2	But dry n2 1cm downstream.
	Photos: 0 # 2-10 Lanjam @ dawnstream end of site
3	\$2-11 uppream view about logiam
潜	- Slectrofished for 100m starting at Logiam Ino fish
44.50 44.50	V V
22/1	
	Edned by
1 1	

λ.



Site 29; Highrise Crk. (Upstream view from logjam)

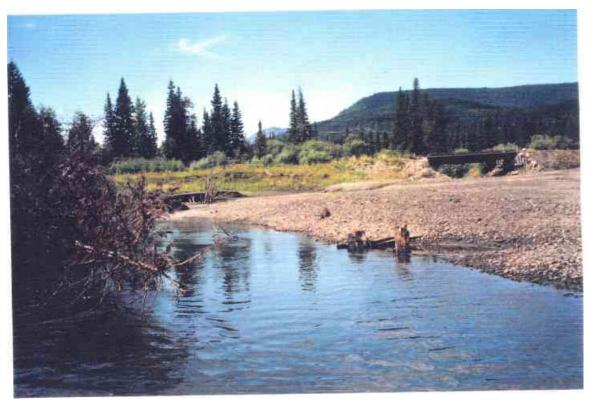


Site 29; Highrise Crk. (Logjam at downstream end of site)

)	)	) DFO/MOEP	)	
		STREAM SURVEY FORM		

Stream Name (gaz.)	Lobe	y/w			lio	cal)	883 1					Ac	cess	1)	2	Method
Valerahad Code 23	0 74	4.9	44	1	1. 1.	1 1 1	Inter tool		1	Reach	No.		(h6km)			
ocation zo n	itus	down	strea	15-	el.		Mape	93-21	115	SILE H	29	& Lille	urs(m)	100	2	GE
bridge	a let	90	I. Same Sa			a	U.T.M.	ALC: NO. OF THE OWNER	Pal7	Diff. C	ENTRY .	(N)	C N	即同		Hat.
dall	2月前	the second se	Agency	52	COM	11/ /G	01	Photos H	t - 1	7 Air Pho	105	_	Louis:	-		
C PARAMETER		VALUE	METH.	0	ct bi	77	7 77	SPECIFIC L	DATA					BATRI	1000000-00	<ol> <li>March 2004</li> </ol>
Avi) ChinaWalle (m), Avi AviaWalle (m)		2.8	1	E	10	11.	1 22	11/2	A	1		-	- Andrewson and Andrewson a	1 de la	Type	Loc'n
Ave.Max.Riffie Depti	(cm)	36	MG	10.	\$2,	18.4	ter ,	16:7,	B.	1			199	_		
Ave.Max.Pool Depth		144	M	20	, 78	120	27	22.20	2			-	100	-	1	-
Gradient %	aller and a	197	1.7	c		ED MAT	EDIAL	%	C	1	BANKS		1997			-
18 Pool 3 5 Hille 2 2	Bunta	Other	GE	1000	2700-270-17	ALC: NOT THE OWNER OF	ind (<2mm)	. 375	1	Height(m)	2. 4 %Uns	itable 39	-			-
- Side Chart &	Stor And		GE	1	a un	amali (2-1	5mm)	10	1 Ale	Texture	E G	LB	1980			-
Areas	As bo-	15 12 15	GU	C A	in wear	large (16-	64mm)	223	1513	Con	linement	EN C	-	) oc	UC	N/A
Debila Stable %	T	25 -	GE	11	$\mathbb{R}^{q_{1}}$	sm.cobbie	(64-128mm	30	福	Valley: Ch	annel Rati	0-2	2-5	5-10	10-	N/A
COVER: Total %		40	GE		-101	lge.cobble	1128-256m	and the second s	-	1.4	14-10	Dry	(1)	M	н	Flood
Comp. Dp Poor 1.0.0.	Boulder In	Veg Over Veg	Cutbank			boulder (>)	256mm)	+	资	Flood Sig	ns Ht(m)	.75	Braid	ed	YC	NS
100% 45 30	T	55	15	S. E	r feitz fe	quan 🗞		0	1	Bars (%)	40	PH		02	(ppm)	
Crown Closure %	T	Aspect	E	STE D	anicm)	15 8	Compact	ion IN H		Wates Temp	10 15	Turb.lom1	4)	Cond.(	25*01	
		DISCH	ARGE								REA	CH SYN	ABOL			
Parameter	Value	Method			Spec	cific Data						(Fish)				
Wetted Width (m)	9.0	1	43.	6.1	, 9	12. 4	1.2, 9.	5								
Mean Depth (m)	0.42	MS		46.	56, 1	18,38		(اللغور)								
Mean Velocity (m/s)	1.3	FLIOM	68	5, K,	7	9	_				an a	. 1				nonees
Discharge (m <sup>3</sup> /s)	2.1	F	13.2	S					nvia	th.Valley:Ch	annel, Blope	11		DEC 87	10/69-30	SS187

Liszeni,				6					REVISED DEC. 87	SSI
	THE STATE OF BUILDING	the contract and the section of the	AND ALL PROPERTY AND	MARY Life Phase Life Anase Life Anase Life Anase Anase Life Anase Anase Life Anase Anase Life Anase Life Anase Life Anase Life Anase Life Anase Life Anase Life Anase Life Anase Life Anase Life Anase	Use Method/ constd be mu			M/VALLEY CROSS-SEC (Looking Downstream) /ETRIC VIEW		R
						2.525.261	IMENTS		<i>Y</i>	-
N.	Channel .		Debris	daana K - 6	els in fort	bughe	y writer	one [], Valley Wall Proces conds bridge	ses	
<u>小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小</u>		3		- 7	- ( <sub>0107</sub> 6	iting Ion	it . ce	5 (BD°		
王書		1.000							Edited by Date Y M D	



Site 29A; Moberly R. (Looking upstream towards bridge)



Site 29A; Moberly R. (Looking towards downstream end of site)

Biream Name usz.) U VII	named	CA 00	NR 110	cal)					Aco	:055	Vá	2	Matho
Waterahed, Ood 1213107	14,4,98,0	121	LL	LILLI	111	1	Heach.	10.	Leng	th(km)			
Location from ros	a roos	Simen		Mapir	3.0/1	6	Site No.	輸るよ	Lthus	irv(m)	5C	)	GE
		$\rightarrow$		U.T.M. VO	5479.	61814	Flan Ci	d Y	N,	C	Floid	10	ilat.
MERMO 91206014	1100 9:50	Agency	FJSim		tos No	No.	Air Phot	05					
C PARAMETER	VALUE	METH.			ECIFIC D					5.0	BSTR	UCTIO	ONS
Leve Onen Width Int 1945	4.0	T	3.5,2	.8.2.5,4.7.6	5					C	Him	Туре	Loc
www.www.widilia.ml	12.16	IT	2.5.1.	111.9.3.1 16	2						1		
Ave Max.Riffle Depth Icm	15.2	115	21,12,	16, 10, 17			1						
Ave.Max Pool Depth (cm)	21.4	MK	- 21,	21,23,16,	19,21	F.	16						
Gradient & mainter	4	CL	CAR	EO MATERIAE	00	C		BANKS					1
- \$2000 mm 7 000	3 0900	GE	FURNE	clay,sift,sand (<2mm)	*		Heightim)		able 4			-	
a serie of the series of the s	10-40 240	-		small (2~16/mm)	10		Texture	FGI	L) R			-	
and the second state of th	anis Isla		Grayes	lerge It 5-54mm	Ten 15	724	Cont	inement	EN CO	D FC	OC.	UC	N/
Cepris Stable %	90		27.00	sm.cobble (64-126mm)	30	and the second	Valley: Cha	innel Flatio	0-2	2-5	5-10	10-	NI.
COVER: Total %	10		「「「「「	Ige.cobble 1128-256mm)	35			085000	Dry	L	M	H	Floa
	ier In Veg Over Veg	Cutbank		boulder (>256mm)	5	3	Flood Sigi	ns Ht/m)	1.05	Braid	ad De	YO	N)
SUM -	05	0	Bedroc	CIRIL STATE OF STATE	00	-	Bars (%)	25	pH	-	0.	inomi (	-
Crown Closure % 50	Sal Aspect	558	D go(cm)	9D Compaction	L M (H)	Ser	Water Temp.		Turb.(cm)	26	Cong		1
No.	the second s	HARGE	Hotel Co		~~~~	-		REAC	H SYN	IBOL		100	
Parameter Val	Je Method		Spec	sific Data					(Fish)				
Wetted Width (m) 1.7	3IT	11	12 13	17 2.120									
Mean Depth (m) 0.1	6 MS	ará	75 NG	DZ3 010 014-	0501	5 3	9 0.10	0.170	3/4/8	1.74			
Mean Velocity (m/s) D.C		17.570	M. 71.2	10,19.7/1017.5/10	6.610								
Discharge (m <sup>3</sup> /s)	1	100		100 - 100 - 2-	2410		14	-1.50.00	0.4			Beg H	(+)

SHEEL SHEELS	STREAM/VALLEY CROSS-SECTION
Special No. Size Range Immi Ling Priss Use Militon Int	L PLANIMETRIC VIEW
	- toold -
2 Most deln's rooted faith 3 some would ing accurry Nove would ing accurry	COMMENTS Destructions ], Riparian Zone ], Valley Wall Processes ], Etc. IPPLES ON V y here Clannel Non upstyleo vn of Survey sate volusel Cin of (11:00-11:18) from volusel Cin of Culturent + Curvent High
Here and the second sec	Edited by: Date Y.M.D

Stream N	ina (ga:	0 0	ind		3 6.	ret		(10	cail									Acc	055	V	2	Metho
Vatoraho	and the party of t	2131	51.1-		4/201-1	304	161	1-11-	111		144	9.95	1.4	14	Reach	No.		Leng	h(km)			-
noiteoo	and the second second second		tire	1	Section 2	From	Personal Pro-	8.0%	15.	K	Map∉	93-	0/	16	Site N	Péé	36	Lthat	rv (m)	5	0	54
tritter i	1020	-	- 19 2								U.T.M.	10.5	508	6183	Fini C	ind.	Y	$(\mathbb{N})$	c	Field	-T	flat.
ALS YMI	912	06	015 1	ime /	4:30	Agency	FT	Crow	RT/D	E /A	HA/GH	notos	1		Air Ph	otos			10		1000 E. 440.0	112473
C	PARAM			VAL		METH.		hadigees			S	PECIF	IC D	ATA					0	BOTR	UGTIC	ONS
Ave.C	han Wid	h (m).	1	6.	72	T	8	0.5	1.3	6.5	5.	3 4	5	5					C	1000	Туре	Loc
and a second second	/et.widih	- service -		2	8	T	43	Constanting of the second	.5 1	2.5	3.5	3.	2							NO	NE	
and the second second	ax.Riffle	F.B. House Int.	(cm)	2	8	ins.	20	2 2	4 7	7. 1	13 2	0.2	10 00	9.	16 ZL	1		-				
Ave.N	ax.Pool	Depth	(cm)	21	25	~5	34	2.25			4.7	1	1		$r_c$	11						
Grad	ont %	1.6.5	6.54		15	CI	C	18A1	EO MA	TER	ALIENS		6	C		BAN	IKS					
		10 50	Bun 3	5 2 00	10111	GE		Fines.	clay sill.	sand	(<2mm)		5	CIE	Heightim)	80	Unsta	able 95				
Side C	a la contra da contra		S-IO Tic	and the second	Chine and the	GE			smail (2	-16mr	n K	1.F	10	1	Texture	F	6)	LR				
	Area%	- Contract	0-613	A Distantion	and the second second	45	12	Graves	lange († (	6-64m	m)	130	15		Co	ofinem	ant	EN C	D FC	00	UC	) N/
Dipris	Stable	and the second second	100 Au-120		0	66	1.4		and in the second second	Contraction of the	-128mm)		40	11	Valley: C	hannel	Ratio	0-2	2-5	5-10	(10-)	N/.
M CC	VER: TO			1		66	霰	le von	Ige.cobt	ble (1 2	8-256mn		20	11	18.0189	a pa		Dry	L	M	н	Flor
Comp	1	L.D.D.	Bouider	In Veg	THE CONTRACT	all and the second		ni i	boulder	()2561	nml		5		Flood Si	gns H	(m)	1.1	Braid	ed	YC	Ń,
100%	1.0000.0000	85	5	1		1	10.926	Bolino	K IADe				-	11	Bars (%)	1	2	pH	matterin	0,	(ppm)	
101	Closure '	-	-	IC IN	Aspect	N	1.000	Deolom	CODE IN COLUMN	Scatter	Compacti	on L I	(F)	3.00	Nater Tem	0.(901	141	(urb.(cm)			125*CI	
AND CAUNT	Giosaire	<u>.</u>	7	1932		HARGE	and the second	40	1.6 I	-	COMP STORE		-	1			REAC	H SYN	IBOL			
2942 2551 1	Paramete	17	Value	M	lethod	milde		Spe	cific Dati	8			-				11953.5	(Fish)	1.61.16.54			
2010	d Width	_	211	-	T	34	24	2	2.8	5			-									
A ST COLUMN	Depthin	1.011-	0.19		1	<u></u>	31. 3	201	4 1		23	171	4 2	0.16	- 14,2	6		1			-	
100 CO.	Velocity	100 Care			0		28	1	1. 1	7.7	20.7		-	enor file	0.000	æ						
Sec. 1	arge (m <sup>3</sup>	_	0.23		0	Ri Z	~ 3	, 16.	41		20.1		-	Wids	h,Valley:C	hannel,	Slope)	1.			(Bed M	atoria
NUISCI	aille mi	Car.	N.13	1			-			<u> </u>			-			_	-	RE	VISED	OEC. 8	1	\$\$1

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C	SP(NB) H	No. S	F BH SVM Size Range(mm)		Use	(united and	L STREAM/VALLEY CROSS-SECTION L	ł
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1							COMMENTS	-
£.(	Channel	Stabi	lity . Debris	. Manage	ment	Concerns	_ Obstructions Riparian Zone Valley Wall Processes Etc.	-
の	mon	d	d channel		Leve	e grow		
额			node. Eer	15 min			50 r 1 ro fish	
Sec.	9.00				1			
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Market Cost       [2],3],0],7],4],4],8],6],4],3],0],6],4]       Image: Market Cost       Reach, No.       Lengthium         Settion       Cost       Crossing       Journines       Mape       0 - 1/5       Site No.       Lengthium         U.T.M.       (0)-5 yr,5'r(150; [Fish, Card, Y N C       Field]       Hist, Gard, Y N C       Field]       Hist, Gard, Y N C         C       PARAMETER       VALUE       METH       SPECIFIC DATA       SOBSTRUCTIONS         C       PARAMETER       VALUE       METH       SPECIFIC DATA       SOBSTRUCTIONS         Ave.Max.Riffle Depth (cm)       C       Him       SPECIFIC DATA       SOBSTRUCTIONS         Ave.Max.Riffle Depth (cm)       C       BED'MATERIAL       % C       BANKS       SOB         Ave.Max.Riffle Depth (cm)       Garya       Substand       Sub	Str	eam Hame Igaz./ L	200	am	ed			tio	(cal)					_			Ac	cess	VZ		Method
Are.Max.Pool Depth (cm)     C     BED MATERIAL     %     C     BANKS       Ave.Max.Pool Depth (cm)     C     C     BED MATERIAL     %     C     BANKS       Ave.Max.Pool Depth (cm)     C     C     BED MATERIAL     %     C     BANKS       COVER: Total %     C     BED MATERIAL     %     C     BANKS       COVER: Total %     C     C     C     C     N/A       Max     Discharter     C     C     Discharter     N/A       Value     Method     Site 30 (2000)     C     C     Hind       Value     Method     Site 30 (2000)     C     C     Hind	Wa		07-	1,4	SIRM	3 018	14	C F F	1.1	í I	1. 1	1.1	1	1	Reach	No.	Leng	thismi		-	
U.T.M.         Josh Strate         Y         N         C         Field         Hist.           Data         Agenov         F3         Crew         HH         /GL8         Photos         Z-q         Air Photos           C         PARAMETER         VALUE         METH.         SPECIFIC DATA        OBSTRUCTIONS           Are.Max.Riftle Depth         C         Html         SPECIFIC DATA        OBSTRUCTIONS           Are.Max.Riftle Depth         C         Html         SPECIFIC DATA        OBSTRUCTIONS           Are.Max.Riftle Depth         C         BED*MATERIAL         %         C         BANKS	1.00				Succession	301 2			-1	-	Map∉	0.1	16		Site No	Sile	37 Lins	urv.(m)			
MD       4 /2       0 /6       1 /2       Time       Abertor       F3       Crew       H H /6H       Photos       2-q       Air Photos         C       PARAMETER       VALUE       METH.       SPECIFIC DATA       OBSTRUCTIONS         C       PARAMETER       VALUE       METH.       SPECIFIC DATA       OBSTRUCTIONS         Ave.Max.Pool Depth (cm)       C       Html       SPECIFIC DATA       BO         Ave.Max.Pool Depth (cm)       C       BED'MATERIAL       %       C       BANKS       Image: Second Continue         Ave.Max.Pool Depth (cm)       C       BED'MATERIAL       %       C       BANKS       Image: Second Continue       Image: Second Continu       Image: Second Continue       I	-	and the second s		10.10	- )		01011556			_	U.T.M.	10.34	25.	130			1000		Field		fist.
C       PARAMETER       VALUE       METH.       SPECIFIC DATA       COBSTRUCTIONS         Ave.Max.Riffle Depth (cm)       C       Htim       Type       Locin       80         Ave.Max.Riffle Depth (cm)       C       BED*MATERIAL       %       C       BANKS       L       L         Ave.Max.Pool Depth (cm)       C       BED*MATERIAL       %       C       BANKS       L <td>RAC</td> <td>MD 42 06</td> <td>121</td> <td>lime</td> <td></td> <td>Agency</td> <td>FS</td> <td>Crew</td> <td>HH.</td> <td>Gitt</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>tos</td> <td></td> <td>11<u>-</u></td> <td>11.411</td> <td></td> <td></td>	RAC	MD 42 06	121	lime		Agency	FS	Crew	HH.	Gitt						tos		11 <u>-</u>	11.411		
Ave.Max.Riffle Depth (cm)       Ave.Max.Riffle Depth (cm)       BO         Ave.Max.Pool Depth (cm)       C       BED MATERIAL       %       C       BANKS       Image: Composition of the co				VAL	UE	METH.		-					_	-				0.0	BSTR	UCTI	ONS
Ave.Max.Riffle Depth (cm)         Ave.Max.Pool Depth (cm)         Image: Comparison of the compar	3.07	Ave Chan Width (m)	建築															C	Hilm	Type	Loc'n
Ave.Max.Riffle Depth (cm)         Ave.Max.Pool Depth (cm)         Image: Constraint of the state of the sta	-34	ssund/howlath (m)	義法															-		80	
Ordent 2x/2         C         BED'MATERIAL         %         C         BANKS         I         I         I           Stable         Ron         Other         Fines         clay silt, sand 1<2mml	1	Ave.Max.Riffle Depth	(cm)																		
Bittle       Rún       Other       Fines       clay.siit,sand (<2mm)       Height(m)       %Unstable       Image: Comparison of the co	100	Ave.Max.Pool Depth	(cm)																		
Bittle       Rún       Other       Fines       clay.siit,sand (<2mm)       Height(m)       %Unstable       Image: Comparison of the co	10.4	Ciritiant & Art	武器		-	1	C	BUT B	EDM	ATER	RIAL	機	%	C		BANKS					1
Side Chap2S         0 <th< td=""><td>1</td><td></td><td></td><td>Q</td><td>hor</td><td></td><td></td><td>Fines</td><td>ciay, sil</td><td>t,sand</td><td>(&lt;2mm)</td><td>242</td><td></td><td></td><td>Height(m)</td><td>%Uns</td><td>table</td><td></td><td></td><td></td><td></td></th<>	1			Q	hor			Fines	ciay, sil	t,sand	(<2mm)	242			Height(m)	%Uns	table				
Average     Operation     Stable     Stabl	1. 热	Side Chan %   o h						342	amali (:	2-160		35			Texture	FG	LR	1.10		-	
Stable %     Valley: Channel Ratio     0-2     2-5     5-10     10+     N/A       COVER: Total %     In Veg Over Veg Cuttank		a spin the first of the first participants of the second state					2	Gravels	large If	6-64	min1			134	Con	finement	EN C	O FO	00	00	N/A
Comp. sum 100%       Dp Pod       L.O.D.       Boulder (in Veg Over Veg Cuttank       Boulder (>256mm)       Flood Signs Ht(m)       Braided       Y       N         100%       0 <t< td=""><td>200</td><td>I MANARCONTINUES I LITTLES</td><td>1000</td><td>ent.d.</td><td>ASTR-SHOP</td><td></td><td>1</td><td>12.12</td><td>sm.cob</td><td>ble (6</td><td>4-128mm</td><td>,</td><td></td><td>320°</td><td>Valley: Ch</td><td>annel Ratio</td><td>0-2</td><td>2-5</td><td>5-10</td><td>10+</td><td>N/A</td></t<>	200	I MANARCONTINUES I LITTLES	1000	ent.d.	ASTR-SHOP		1	12.12	sm.cob	ble (6	4-128mm	,		320°	Valley: Ch	annel Ratio	0-2	2-5	5-10	10+	N/A
Comp. sum sum 100%     Dp Pod 100%     L.O.D.     Boulder in Veg     Over Veg     Cutbank     boulder 1>256mm1     Flood Signs Ht/m     Braided     Y     N       100%     Image: Straight of the st	3	COVER: Total %					E.	Europa	lge cob	ble (1)	28-2567	m)		e glic	S-St	ago tati	Dry	L	м	н	Flood
Sum 100%     Compaction     Compaction     Compaction     DH     Ogppm/       Crown Closure %     C     Aspect     Digotrni     C     Compaction     L     M     H     Water Temp/(*C)     C     Turb/(cm)     Cond.(25*C)       DiscHARGE     DiscHARGE     Specific Data     FEACH SYMBOL (Fish)     Fish)     Cond.(25*C)		Comp. Do Poor L.O.D.	Boulder	In Veg	Over Veg	Cuttenk	100		boulder	1>256	Smith			351				Braid	ed	Y	N
Crown Closure %     C     Aspect     C     Compaction     L     M     Water Temp, (*C)     Turb.(cm)     Cond.(25*C)       Image: Second Cond.(25*C)     DISCHARGE     DISCHARGE     REACH SYMBOL (Fish)     Cond.(25*C)       Image: Second Cond.(25*C)     Method     Specific Data     REACH SYMBOL (Fish)       Image: Wetted Width (m)     Image: Second Cond.(25*C)     Image: Second Cond.(25*C)	靈	sum			1		100	Bildtor	RIAN	いた		2		-90	Bars (%)	1	pH	1	0	(maa)	
DISCHARGE REACH SYMBOL (Fish)           Parameter         Value         Method         Specific Data         REACH SYMBOL (Fish)           Wetted Width (m)	100	Crown Closure %		C	Aspect	-	1.140.0 (1).10	the second se	-		Compact	ion L I	мн	60000	2018/14/01	PCI 5	Turb,(cm)	1	1	Contraction of the local distance of the loc	
Parameter Value Method Specific Data (Fish)	Salt			1.00	DISCH	ARGE	192.7	80								REA	CH SY	MBOL	-		
		Parameter	Value	N	The second second			Spe	cific Dat	ta			-	f .		0.050		11210			
	10E	Wetted Width (m)	11282-01285		Itera unita	-	-														1
Mean Depth (m)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mean Depth (m)		<u>i</u>							-	-			-					-	
Mean Velocity (m/s)		And the second se	_								_										
Discharge (m3/s) (Width, Valley: Channel, Siope) (Bed Material)	14					1		-			_		1	TWidt	h,Valley:Ch	innel.Slope	y #			Bed N	lateriali

	Species	No. Si	rtsi:()M te Rangelmm)			iyon (Res.		STREAM/VA {Look PLANIMETRI	LLEY CROSS-S ing Downstream) C VIEW		R
							-				
纑							COMM	I	11 11 12		
主慶で		stabilit u.H.p		Manage wer p	_		Distructions	□ Biparian Zone □ a.m. of c.	. Valley Wall Proc w) vert ;	i~penetrat	ي الم
14	_										
194	ph	ato	2-9	-> C14	liert	C	road	crossing i	deep_	Pool.	
24	1							,	<u></u>		
2	_	-									
25											
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										Date Y M D	

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Site 37; unnamed (Looking upstream at culvert and deep pool)

		STREAM SURVEY FORM			
aned		(Igcal)	Access	12	Methor
	12 010	D	ength(km	1	
1	114		theury.to	50	GE
And the second second	0				Hist.
Time 10:15	Agency				
VALUE	METH.	SPECIFIC DATA	100	BSTRUCT	DONS -
10.6	T	15.8 15.1 8.0 7.4 17	C	HION TYL	e Loc'r
6.5	1		1		
38	ms	22 74 78 44 52			
71	ns	and going which where the	030		
12	CL	C BED MATERIAL S C BANKS	100		
	GE	Fines day, slit, sand (<2mm)	81 4		
40 >40		Texture F G L	R		
		(West Gravets)	CO F	00 (1	C) N/A
In the second second	GE		-2 2-5		
	and colored as		ry L	(M->H	-7 Flood
In Yeg Over Vag	and the second		25 Brai	ied Y	Ba
		PROTEIN PROTEIN	100.00		
P SCHOOL ST	EAR	and the second se			
1000000	HARGE	the second se			
Method		Specific Data (F	sh)		
1 1	4.8	4.8 66 66			
76	1 100 - 14	the state of the s			5.5
3		(Width, Valley: Channel, Slope)		(Bed)	Material)
	In veg Over Vag	14.83421010       Janstream       Janstream       Janstream       Janstream       VALUE       METH.       10.6       T       38.1       12.5       21       38.1       12.5       21       38.1       12.5       21       38.1       12.5       21       38.1       12.5       21.5       38.1       12.5       24.8       9.5       9.5       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       9.65       10.50       11.5       12.5       12.5       13.5	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

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	1000	199349 SHEAT				STREAM/VALLEY CROSS-SECTION
Q 300	No.	Size Range(mm)	den Berest	Use	thursday 1	L 7-1-1 B
3VC	3 19	50-110	A	RE	L -	PLANIMETRIC VIEW
200	4 1.1				-	
100						Nº .
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-122	_					min
200	_					
100				_		~ ~ ~
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13					.5	
					N. T	
		024				COMMENTS
Cha	nnel Sta	bility Debris	Manao	ment C	oncerns .	Obstructions 🗍, Riparian Zone 🗌, Valley Wall Processes 🔲, Etc.
					the second se	Graided whitste defined channel > stran floring
1.12					nghiy	managed will be drined channel & pream thering
		cutting			15 M	
pr	tures	12 200		dr.	survey s	21 -
2.5			Fream	4	0.0361 - 676	<u> </u>
-	NOTE		h # 30	1. 13	not	the putted rach & (see map)
3 01	NY	and fish	1 SUMM	NC	Iasa	invenile juse mais also mound!
m m	igra	how , spo	iwhen	a.in	cuba to	en O
	0	1		CV		
			111			
e	_			_		Edited by
12-1						Date Y M D

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Site 38; unnamed (Upstream view of survey site)



Site 38; unnamed (Downstream view of survey site)

tream Name (gaz.)	KA	wid	creek	llo	call					Acc	055			Metho
Alershed Code 12,31				1 1 9 9		111	1.19	Reach	No.	Leng	(hism)	V.		
ocation From m				upsh	ean Mape	93-0	19	Site No.	ALCONTAGE	Lthat	rv(m)	80	m	aE
The beaverday	m	)		1		10.5405	6179	Fiah Ca	rd Y	N	C	Field	31	Hist.
10 YMD 920161		Ime	Agency	FT Crew	GH/HIT	Photos #		Air Pho			17			
PARAMETER		VALUE	METH			SPECIFIC	DATA				10	BATR	UCTIO	ON8
Ave Chan Width (m)	- Al				and some the	-		_			C	Atlmi	Туре	Loc
Ave Wet Width (m)		1.95	T								3	1	BD	40
Ave.Max.Riffle Depth	cm)										10			
Ave.Max.Pool Depth (c	am) 🖪	\$ 620	m MS	0.78, 0	145 m	_			_					1
Gradient %	21	S = 13	5 M 1 + + + + + + + + + + + + + + + + + +	C	ED MATERIAL	· ·	C		BANKS		10		11	
the second se	nten	Other		C Fines	clay,silt,sand (<2mm)			Height(m)	%Unst	able	12			1
Side Charl 0 0-	io Tho	40 240	1	Ser Stall	small (2-16mm)	法施		Texture	F G	LR				
		-16 316		Gravela	large (16-64mm)			Con	inement	EN CO	) FC	OC	UC	NZ
Stable %				35 (B.B.B.	sm.cobble i64-128mm	1 248	130	Valley: Ch	annel Ratio	0-2	2-5	5-10	10+	NU
COVER: Total %				L. IKOTA	(ge.cobble (128-256m	m)	1.20	a de St	NOV TO	Dry	L	м	н	Floo
	Souider	In Veg Over	Veg Cutbenk		boulder (>256mm)		10.22	Flood Sig			Braid	ad	Y	N
sum 100%				Bedroc	CIBICAL			Bars (%)		pH		0.	Imagl	
Crown Closure %	04310	Aspe	oct	D <sub>90</sub> (cm)	Compac	ion L M I	1 288	Water Temp.	6.5	Turb, (cm)		Cond.	(25*C)	1
		DI	SCHARGE	And and and an other termined	Llicarish				-	CH SYN	BOL			
Parameter	Value	Method	1	Spec	cific Data		1			(Fish)				
Wetted Width (m)	())						1							
Mean Depth (m)							1	1						
Mean Velocity (m/s)														
Discharge (m <sup>3</sup> /s)							Widt	In, Valley: Cha	nnel,Slopel	12			Bed M	ateria

Ste av hut		IDEN BUSIN	MARY			STREAM/VALLEY CROSS-SECTION	
	No. S	ize Range(mm)		Use MONGUTO		(Looking Downstream)	R
				the second se		OMMENTS tions Riparian Zone . Valley Wall Processes . Etc.	
2 Be	photo'	ponds. #2-8: compos	l Beaver Sition	dom Mostly en prond	n/pon Ahes	de 13 slow-flowing runs led by d. 40m upstican Arom month I small gravels	
						Edited by: Dete Y M D	



Site 39; unnamed (Upstream view of beaver dam)

Stre	am Name (gaz.) U	M	MA	rede	\$00	K	tia	call								A	ccess	V	2	Method
Nat	arshed Code 23	01	11,11	B187	31	1	10.00	DE DE DE L	1.1.1	1.1	1	1.10	Reach	No.		Len	gthike	n)		
	tion hiked	÷.	-Un	stre					Мар#	3	. 0	19	Site No	. 1	11	Lth	surv.(n	n)		
									U.T.M.				Eish Ce	bri	Y	N	C	Field	14	Hist.
ate	YMD 912 06	111	Time	15:25	Agency	F.	Crew	GH /H		Photos			Air Pho			- Part			and the statement	- 1
C	PARAMETER	-[-4		LUE	METH.	1	<u></u>	M.1.		SPECI	FIC I	DATA	2				L	DBST	UCTI	ONS
	Ave.Chan.Width (m)		1				_										C	Httm	) Type	LOCT
(At	Ave.Wet.Width (m)																	1		
	Ave.Max.Riffle Depti	(cm)		1	1.80	1												1	1	1
X	Ave.Max.Pool Depth	(cm)	1	14								_						1	1	1
10	Gradient %		1			C	1 · / E	BED MATE	RIAL	1	%	1 c	1	BAN	KS		1	1	1	-
	N Pool Bittle	Bun	Te	Other			Fines	clay_silt, sand	t (<≥mmi)	24	T	1	Height(m)	2	Unst	able			1	1
8	Side Chan.%	0-10	10-40		1	19		small (2-16)	men i	1.	1		Texture	F	G	LF	1 -	-	1	1
	the second s			>15	2	電	Gravels	large (18-64	mmi	13	t	-0.0	Con	fineme	nI	EN I	CO F	ic o	C UC	N/A
	Stable %	Ī			10-1-1	2.00	100	sm.cobble 16		102	1	12	Valley: Ch	annei	Hatio	0-2	2-5		-	N/A
10	COVER: Total %	-			1	1	Larges	ige cobble (1	28-258mm	n) All	-	199	St.			Dry	L	M	н	Floor
	Comp. Dp Pool L.O.D.	South	int in Ve	Quer Veg	Cathanis	<b>海</b>	and states of	boulder 1>25	10-10-023	- 3	-	100	Flood Sig	100000	Sector Sector	1.000	Brai	ded	. sonii	N
	sum 100%	000				- 18	Bedroo		D <sub>2</sub> /		-	-	Bars (%)	-	i date i	pH	-	-	(mqq)	<u> </u>
100	Crown Closure %		IC:	Aspect		1913 1813	Daolem	1 Text	Compacti	001	мн	1200	Water Temp.	101 7	7-	Turp.lam	1	1.0	200101	-
봂	CROWN CROSLING IS		192	Ma Martin area	HARGE	199	10.90,000	1.21	- oonpara	w.   -	<u>m 0</u>	(31)	that is the time.	112-115	T	CH SY		122.16		
	Parameter	Valu		Method	IANGE	-	Sne	cific Data			-	1		1	1CAI	(Fish		÷.		
	Vetted Width (m)	o ante		meniod	_		opo	Cine Pola	-	-	-	ł								
81	Aean Depth(m)									141	Viet		1							
201	Aean Velocity (m/s)		-				10	0.00		14	(Veni):	1								
8 <b>1</b> -	and the second se	-		_			-			2.1	12.50	iwie	th.Valley:Ch.	innal S	ione!				IBed A	aterial
550	Discharge (m <sup>3</sup> /s)									2	4E 1 4	iwie	n,Valley:Ch	innal,S	lopal		EVICEN	DEC. 8	ised N	fater SS

	No. Size Range(mm)	Use	L STREAM/VALLEY CROS	
			_	
1 crei	Stability, Debris, Mansg 212 New Par YSH Near Mob Wer Leaches Mo	her ph	oberly, inskad turns	
				Edited by: Date Y M D:

The case 1230 1794 SBB BIT 111111111111111111111111111111111	-	thikm	100.00		
	126.40		201		
	ICTIERS.	ury.lm	112	012	
	N	CI	Flold	DZ.	Hist
12 116 16 16 10 15 Dosson FT Den 10+144 Photos H- 21 Air Photos	~	1	- Constant - S		
PARAMETER VALUE METH. SPECIFIC DATA		list	DESTR	UGTI	ONS
B.Y. Chan Wildin Tim 2 8.4 T. Q. B. 1.80 , 11, 1, 7.6, 7.1		C	Him	Type	Loc
1. Martine marker 3.6 T 0.6, 3.9, 42, 55, 2.6		112	-		1
Ave.Max.Riffle Depth Icm] 22 MG 25,23,20116,74		1	-		-
Ave.Max.Pool Depth (cm) 37 MG 42,35141,23,44		-	1	1	1
Gradient & C BANKS		1	1	-	
* Post 2 Other 6 Other 2 Dother 55 2, Fines clay sill send (2mm) 40 T Heightim) 62 "GUnst	table ID		1	1	1
Section 2. 10 6.00 10.20 20 20 20 Ca E small (2-15mm)	L) R	32			
Reax 0 515 516 56 GE GE GE (15-54mm) 20 20 Confinement	EN CO	O F	c oc	c Cuc	) NI
Stable % 15 (a E am.cobble 184-128mm) 725 (a Valley: Channel Ratio	0-2	2-5	5-10	GD	_
COVER: Total % 20 GE la rel s las cobbis il 28-256mml 35	Dry	L	(M)	Л	Floo
Comp. Dp Pool L.O.D. Boulder In Veg Dver Veg Cutbenk Stand Social Social Stand Stan	.66	Brak	ded	Y /	N)
100% SD T 35 D IS T BARRON (19) 20 - Bars (%) AVT	pH	-		(mqq)	r
Crown Closure % 15 Aspect N Deptermi 25 S Compaction L(M)H Water Tamp. +Ci [ ]	Turb.fem)	47	and the second se	125°C)	-
	CH SYN	MROI	-		1
Parameter Value Method Specific Data	(Fish)		5		
Wetted Width (m) 3.5 T 3.4 25, 2, 8, 4.3					
Mean Depth (m) 0.26 15 .25 .23 .26 .24 .34	1			90C	
Mean Velocity (m/s) 0.41 00 225/10, 305/10, 214/10, 205/101284/0	1				
Discharge (m <sup>3</sup> /s) 0/28 Width valley c				dea t	Arriter

USE COMUTE No. Size Rangelmm) Les MOLE Use Note	L PLANIMETRIC VIEW
	COMMENTS COMMENTS Incerns , Obstructions , Riparian Zone , Valley Wall Processes , Etc.
Photos #- 21 → 35 ~	upstream of site looking Downstream
2- 	Edited by: Date Y M D

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a' i

# DFO/MOEP

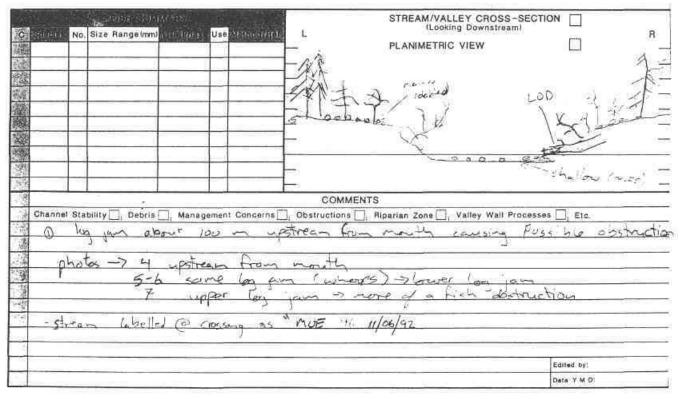
970 - 1169

-	am Name (gaz.)	une	and	der	eck		(10	cal)					Ac	CESS			Metho
11	ershed Code 23					a t	1.1	1 3 3 4 3 1	1.1.1	0.0	Aeach.	No.	Leng	thikm)			
_	ation (2 h	-	h		3 ma	u	oshe	Que Mage	93-0	5/4	STA NO	際 45	(ins	urv(m)	57	)	6
	Contraction Contraction of the second		5	6		1		U.T.M.			Entro	Y for	(N)	and the second second	Eleld	1	1000
л.	XMP 9 7012	0 4	1000 /	3:25	Agency	EJ	Crew	GH/ANI/	hotos		Air Pho	105					
	PARAMETER		VAL	and the second second	METH.	1	ALCONO.	the second data was a	PECIFIC	DATA				ASO.	BATA	UCTI	ONS
	Ave Chan Width (m)	彩色												1¢.	<b>Hum</b>	Туре	Loc
	Ave, Wet Width (m)																
	Ave.Max.Ritfle Depth	tem)				1											
-	Ave,Max.Pool Depth	(cm)												100			
	Gradlent %	Sile				C	法 · · · · ·	ED MATERIAL	%	C	í.	BANKS		訪			1
	Ve Pool Pliffie	Run	01	her		12.8	Findat	clay,silt,sand (<2mm)	60	12	Height(m)	%Unst	able	30			
	Side Chan % o			12.40		三世	1000	small (2-16mm)		2.5	Texture	FG	LR	-	Ť.		1
Ê				いる		低	QLV.L	large (18-64mm)		1.202	Cor	finement	EN C	O FC	OC	UC	N/
	Stable %		M107.		-	- Sala	2 and a state	sm.cobble (64-128mm)		1.88	Valley: Ch	annel Ratio	0-2	2-5	5-10	10+	N/
2	COVER: Total %						matt	lge, cobble 1128-256m/	1	2	1 1 5	(irt)	Dry	0	м	н	Flo
	Comp. Dp Pool L.O.D.	Boulder	in Veg	Over Veg	Cutbank			boulder (>256mm)	100	Printing and	Flood Sig	ns Ht(m)		Braid	ed (	(Y)	N
	sum 100%					2	Er felmetel	(H)	1000		Bars (%)	65	pH		0.	(ppm)	1
ŝ	Crown Closure %		C.W.	Aspect	NE	A COLUMN	D <sub>90</sub> (cm)		n L M H		Water Temp	1º01 8	Turb.(cm)	-	1	125*C1	-
			Tables		ARGE			I CARTA		C.C.C.M.		REA	CH SYN	ABOL			
i.	Parameter	Value	M	fethod			Spec	cific Data					(Fish)				
Į.	Wetted Width (m)		1		1												
	Mean Depth (m)										-						
	Mean Velocity (m/s)	0															
	Discharge (m <sup>3</sup> /s)		1		-	1	_		11.57	Widt	h,Valiey:Ch	annel,Slope)				(Bed M	laterii

C Specil	8 No.	FISH SUM	MARY	Use Method/Ref.	ST	REAM/VALLEY CROSS-SECT	ION D
14			and Addam	THE COMPANY TA	PL	ANIMETRIC VIEW	а П <sup>в</sup> _
2013 2014	-				Han n		-
	+				The L		7-00
					The 1		т
							ボー しょせ
Ş.					<u>_</u> )	1. 1. 12	1 Junior
					1	-	~
					- 'n	$\sim$	
	$\eta = \eta$						
	el Stabi	lity . Debris	Manage	ment Concerns	COMMENTS	in Zone 🔄 Valley Wall Processe	
B Ch	Thes	brande	A		n service that in parts	. Zone []; Valley Wall Processe	s; EIG.
le hi 2 cop	日日	Aw + 1	nostle	a Sande	> 7 very	cood fish & aubre	tat
46			1			0 1	
*					<i></i>		
96							
12							
2	_						
u.							Edited by:
							Date Y M D

U/

Str	eam Name (gaz.) U.	0.00	red			llo	call							Ac	cess	VZ		Metho
Wa			ALC: NO WE CAN	151	4	14 6	1491	4.01	19.1	14	14 L	Reach	No.	Leng	thorn			
Loc	ation from roma	the		eam	6	50 8	~	Map#	93-	0/	9	Site No	. 46	Lins	urv.(m)	10		GE
	above. (1+ deep	8001	5.0	ind	ch	inte		U.T.M.O	-53	77.6	1724	Fish C	ard Y	N	C	Field	71	fist.
Dat	OYMD 9206111	Time	13:20	Agency	ES	Crew	HH/GI					GAIT Pho						
С	PARAMETER	VA	LÜE	METH.				SP	ECIFI	C D/	ATA				0.0	BSTR	JCTIC	ONS
1.5	Ave.Chan.Width (m)	6	7.7	5	10	>.7.	5.9,	6.1.5	.0,	5.	8				C	Htim	Туре	Loci
1	Ave.Wet.Width (m)	4	.2	T	4	9 1	AT I	1.3 . 1	2,9	4.	3	_			0			
15	Ave.Max.Riffle Depth (cm	2	510	05	2	5,2	5, 28,	29,21	1 '	)					- 54			
	Ave:Max.Pool Depth (cm)	4	4-59	rs	60	2,63,	54,65	7,28,2	4 ,1	17				2918-2				
	Gradient % 2			CL	C	E	ED MATE	RÍAL	96		C		BANKS	-	1			
3	% Pool ( C Riffle 5 5 Run	350	ther	GE	1	Fines	clay, sill, sand	i (<2mm)	5			laight(m)	47 HUnst	table 10	2			
Ĵ.	Side Chan.% 020-10	10-40	>40	SE	X	Gravels	small (2-15)	nm)	5			lexture	E G	(1) R	13.			
1	Debris Area% ~ 5 0 0-5	5-15	>15	GE	45	Graves	large !16-64	(mm)	15		43	Cor	nfinement	EN C	O FC	OC	(ÚC	) N/I
-1	Stable % /D			GE		S. 4.	am.cobbie (6	4-128mm7	40		論集	Valley: Ch	nannel Ratio	0-2	2-5	5-10	10-	N/A
is:	COVER: Total % 15			GE		Larges	lge.cobble (1	28-256mm)	35		Je-	The TS	lage Ital	Dry	L	M	н	Floo
		ler in Ve	g Over Yeg	Cuthenk	1	12034	boulder (>25	6mm1	P		9 (A)	Flood Sig	gns Ht(m)	.3	Braid	ed	YC	N)
	100% 405 40 5	1	10	T	- M	Bedroo	k (B)	Lite inter				Bars 1%)	e	pH		02	(ppm)	
-	Crown Closure % 2,0	25	Aspect	N	建	Deolom	20 题	Compaction	L+M	) н	6. 1	WaterTemp	101 1.5	Turb.(cm)		Cond.	25°CI	
			DISC	HARGE									FIEA	CH SY	MBOL	-		
	Parameter Val	ie 1	Method			Spe	ofic Data							(Fish)				
道	Wettad Width (m) 4.	6	T	u.,7	- 4	.H .C	1.5 1	4.6.5	.3									
1	Mean Depth (m) .2		m3	10,	16,	17 1	27 ZI	21										
数	Mean Velocity (m/s) 1.0		F	19.1	ē.,	9.4	8.3 9	4.10	8 5	10	m							
1	Discharge (m <sup>3</sup> /s)  . C	3			1		1.				Width	n,Valley:Ch	annel,Siope)	1		2	Bed M	eterial



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Site 46; unnamed (Looking upstream near mouth)

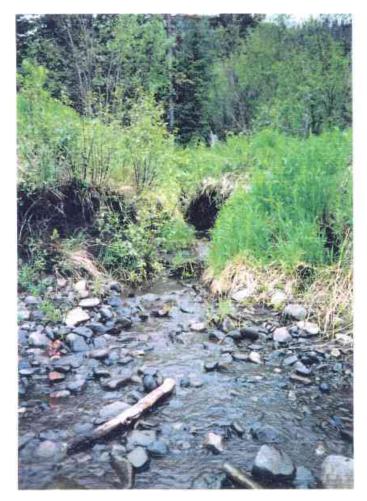


Site 46; unnamed (View of lower logjam)

Stream Name 1922 1/1/11/10/00/00 CULER (local)		Access	VZ	Metho
Naterahed Code 2307448898	I I Beach Nor	engthikmi		
Location ( has been alielle K? . I the Mape of	20-9 1000 47 6	haurs (m)		GE
Wormere, tapela readede ) on upstran U.T.M. 10	5373.61722 100 Gold Y (N	) c]'	Field St	Hiat.
Date YMD 12 DIG 11 ( The 17:10 Menoy F5 Down GH /HH/ Pho	olos #2-23 Air Photos			
C. PARAMETER VALUE METH. SP	ECIFIC DATA	BI(Q)	STRUCT	IONS!
Ave Chan Width Mar 2.1 MS 2.20,0		C	Typ	toc'
a Ave. Wei Width (前国語語) 1.15 MS D.B 1.5		12	IF	100
Ave.Max.Riffle Depth (cm)		12		
Ave.Max.Pool Depth Icm1 22 MS 18, 24, 25, 19		12		
Gradient & Resident	% C BANKS			
A Poos sume Other 2 Diest clay.sill, sang (<2mm)	3 Height(m) %Unstable	1.25		
Side Quint 0 0 0 0 0 20 210 small (2-16mm)	Texture F G L	B		
Acta do 10-6   6-16 216   1	Continement EN	CO FC	OC U	C N/A
Dions Stable % sm.cobbie (64-128mm)	Valley: Channel Ratio 0-	2 2-5	5-10 10	+ N/A
COVER: Total % COVER: Total %	Bintis D	(Y (L)	мн	Floo
Comp. Dp Paol L.D.D. Boulder in Veg Over Veg Curbank School Coulder (>256mm)	Flood Signs Ht(m)	h Braide	Y be	3
sum 100%	Bars (%) p	H	O√ppπ	ut
Crown Closure % Compaction Compaction	L M H Water Temp. (*G) 5,5 Turb I	cm) 25	Cond.(25*(	91
DISCHARGE	REACH	YMBOL		
Parameter Value Method Specific Data	(F)	ih)		
Watted Width (m)				
Mean Depth (m)				
Mean Velocity (m/s)				
Discharge (m <sup>3</sup> /s)	(Width, Valley: Channel, Slope)		(Bed)	Material

STATES STRUMMARY	STREAM/VALLEY CROSS-SECTION
C Shorte No. Size Range (mm) C (f) Don se Use Moldov (f) )	L PLANIMETRIC VIEW
	COMMENTS
Channel Stability , Debris , Management Concerns Enters & proje of the Mole Mostly Clay spine (Sn Banks under at most o Phons: # 2-2 Mouth # 2-3. Wata	Obstructions [, Riparian Zone ], Valley Wall Processes [, Etc. ener Not the Moberly Relf. nall + lande grand point Siles. ( the lander on both Siles. ( where creek anter Moberly praid.) fall
	Edited by:
	Date Y M DF

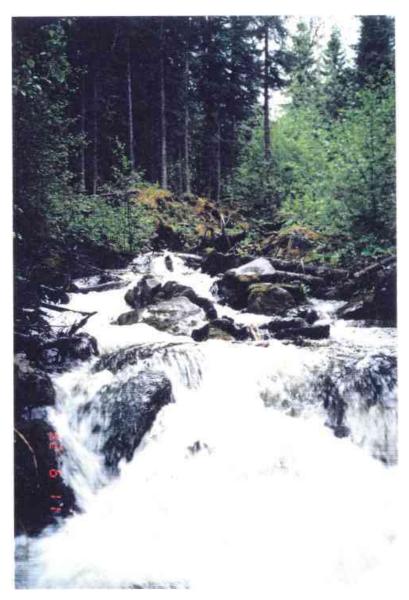
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Site 47; unnamed (View of waterfall)

Stream Name Igaz	a un	name	10	reck		(10	ca))					Ace	0.55	N:	2	Metho
Watershed Code					N U	9-9-		44	9.9	Reach	No.	Lang	th/km	1		
Location Location	neriti		Ze		-	pstre	m ( Map#	93-	019	Site No	. 48 G	Lthat	irv.(m	1	6	14
		7			. K	1	U.T.M	0 57	59.417	24Fish C		N	C	Field	FI	list.
Date YMD 912	016111	Time 10 :	:50	Agency	13	Crew				4-ASPh						
C PARAM		VALU	E	METH.				PECIF	IC DATA	+2-1			1:0	BSTR	UCTIO	ONS
Ave.Chan.Widt	h (m)	5.88	3	T	4	6.6	.9 70 3	5.4	55				C	Ht(m)	Type	Loc
Ave.Wet.Width	(m)	3.5	6	T		8.4	.5 3.7 3	.3	3.5				1.1	K59.	C	3
Ave.Max.Riffle	Depth (cm)	18-	6	MS	1.7	2 22	8'21 15	8 S						5.5.	R	3
Ave.Max.Pool I	Depth (cm)	35		MS	29	33	30,32,40							4-	×	15
Gradient %		10		CL	C	E	ED MATERIAL		6 C	-	BANKS					1
S % Pool C Rith	e 9 CRun	5 Other	•	GE	2.5	Fines	clay,sill,sand (<2mm)	T		Height(m)	ZK %Unst	able 15				
Side Chan.% /	5000-10	10-40 2.	40	GE	3		small (2-16mm)	-5		Texture	(F) G	DR	0)			
Area%	0 0-5	5-15	15	GE	133	Gravels	large (16-64mml		145	Co	finement	EN CI	D FC	: 00	) uc	N/.
Debris Stable	× 15			GE	-	1.1	sm.cobbis (64-125mm)	15	201	Valley: C	nannel Ratio	0-2	2-5	5-10	0	N//
COVER: Tot	al % 20	1		GE		Larges	Ige.cobble (128-255mm	AD	656	P. C.S	lage (	Dry	L.	CM-	YH)	Floo
Comp. Dp Pool	L.O.D. Bould	or In Veg O	ver Vag	Gutbank		12 M	boulder (>256mm)	190	1.75	Flood Si	ons Ht(m)	1.2	Braic	fed i	(3)	N
100% 10	40 45	4 4	5	/	1	Bedroo	k (A)	1		Bars (%)	15 %	pН		0,	(ppm)	1
Crown Closure %	1-1-1-1	19:00 A	spect	Nhl	酸	Deolem	70 Se Compact	and second a	DH S	WaterTem	1101 5	urb.lcm)		Gond	(25°C)	
		Activity .	DISCH	HARGE	i cus						REAC	H SYN	BOL	5	-	
Parameter	Valu	e Met	hod			Spe	citic Data	1	100			(Fish)				
Wetted Width	(m) .2	5 T		.3	28	. 21	13, 26, 2	B								
Mean Depth (m)			5	3.4	5.	1 3	1 1.8 2.3									
Mean Velocity		5% F	F	10 5	8	9 16	1 9.5 5/10	~								
Discharge (m <sup>3</sup> /					12		innin - e i	<u> </u>	Wid	th,Valley:Cr	annel, Slopel				(Bed M	ateria

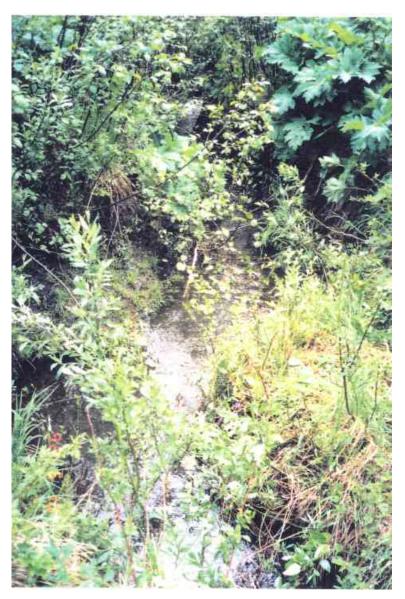
C STRUCT No. Size Range (mm) C( Philss Use R(Thord Part L No. Size Range (mm) C( Philss Use R(Thord Part L No. ES: too steel + A. St Florerin D V. U. Little correct or Aish:	STREAM/VALLEY CROSS-SECTION
	the pulles pulles of the
Сомм	ENTO
	, Riparian Zone , Valley Wall Processes , Etc.
	read ~ steep + 1. flee)
	each NOTE; see photon
(3) munty large rocks surrounded by sil-	
Dooting - 27 -> 100king upstream	from mouth
	upstream - as -> cyluert & road crossing
	since stream to sum over road, - large
pool upstream of road but abstruct	ted by culvert (see picture 25)
photo # 2-1 -> Flooded culvert	
- creek is letel & orange tape @ X-ing	
	Date YM D
	Date T M U



Site 48B; unnamed (Upstream view from mouth)

stream Name igez. Whinamped in	2h (local) Ac	cess V Z	Metho
Vaterahed Code 2307449900	and a second sec	(th0km)	
ocation from wouth to zo	- 40 stream Maps 23.09 Bit No. 549C Ma	0740m) 200	) Ge
	U.T.M. IL STATE PERMOCAND Y N	C Field	+list.
ATE YMD A 12 016 110 TIME 13:30	Adenor FS COM GHHH / Photos + 18-19 2 Au Photos	Party standard	116-32-32044
C PARAMETER VALUE	METH. SPECIFIC DATA	OBSTRUC	TIONS
Ave Charl Width Line 2.49	T 85 14 2.5 2.8, 20 5.4	C HEIN TY	THE R. LEWIS CO., LANSING MICH.
Ave webydein ami 2005 1, O	BS 45 15 1.2 11 45	3 FW B	0 20
腔 Ave.Max.Riffle Depth (cm) 12.%	MS 20 FUDA	T	
Ave.Max.Pool Depth (cm)	M5 31,23, 9	1.31	
Gradient & State Aut	C BANKS		_
\$2001 (1 10 10 1 5 19 4 7 5 0ther	GE Ineas day sill, sand (<2mm) 25 Height(m) .55 %Unstable 75		_
Side Chan %   0 0-10 10-40 240	(ST amail 12-16mm) 12 15 Texture (F) G L R		
Arean of lovel forter 215		O FC OC (	CC) NI
Stable % BO	am.cobble (54-128mm) Valley: Channel Ratio 0-2		0-) N/
COVER: Total % / C	GE India Ige. cobble (128-256mm) C El 10 Dry		Floo
Comp. Dp Pool L.C.D. Boulder In Veg Over Veg		Braided @	N
100% 5 5 / 100 40	HO Bars (%) OPH	Odpp	mi
Grown Closure % 10 St Aspect	K Deg(cm) . 9 S Compaction O M H Water Temp. C 6 Turb. Cm	Bed Cond.125	
DISC	HARGE REACH SYN	ABOL	
Parameter Value Method	Specific Data (Fish)		
Wetted Width (m) 0,35 T	5. 46 32 33 3 19		
Mean Depth (m) , 8,24 MS	.21, .21 .24 .29		540 C
Mean Velocity (175) 0.96 F	3,32.8, 2.9		
Discharge (ma/s) Pro.DA	(Width, Valley: Channel, Slope)	18) er	d Materia

SI Studie III Use Monor / Pol	L PLANIMETRIC VIEW
	COMMENTS
Denouth of stream to beaver dam Bustien via consuls of gre beaver of the type and of re- photos 1-18 downstream to	usses + horsetells + soplings that have been flooded ach words month
- 19 upstran from - 20 beauer dam - 21 point where	stram crocles road
• • • • • • • • • • • • • • • • • • •	Edited by Date Y M D



Site 48C; unnamed (Looking upstream from mouth)

_				STREAM SU	INVET 1	Onim							
Str	eam Name (gaz.) Frank	how	-EC 1	(local)						Ac	ess.	UZ.	Metho
	iterahed Code 23074		161	and in relieved	En de la	E E	ь в ľ	Reach N	0.	Leng	th(km)		67.
-	cation From no	11	1000	ctan is -	Map#	93-01	19	Site No.	49	Lthat	rv.(m)	101	SE
		Sector .	4.2	CLG B	U.T.M. YS	5355	.17.	Tsh Car	d (Y)	N	9	Field	Hist.
at	WDDALLOBOLUT	ne 14:45	Agency	ET Crew + A /G	1/ P	hotos 11 -	- 5	Air Phot	DS		1-2-A		-
C		VALUE	METH.			PECIFIC I	DATA	5	11.5		OF	STRUC	TIONS
-	the second se	26.6	1+	29.3 27	.92	21.6	702.	£ 7	8.6		C	Ht(m) T	pe Loo
	Ave.Wet.Width (m)2	5.2	+	3314	1 /	51	3.0	S # 1	1.6		17		
-	Ave.Max.Riffie Depth (cm)	12.	MS		2.9		0.52-10	1				1	
	Ave.Max.Pool Depth (cm)	32	MG	32,26 30.		4							
	Gradlent %	3	CL	C BED MATE		%	C	1	BANKS				
-	No Pool 1 PATTE 7 CRun 1	Other	GE	Fines diay.silt.san	d ((2mm)	5	н	eight(m)	4 SeUnas	able			1
1	Side Chan.% 0 0-10 10-	40 >40	GE		mm)	5	τ	exture	FG	(D) R			
1	Area% Sola-so s	the second second	GE	- Gravels large (18-64	A cnm l	10		Conf	nement	EN C	O FC	OC (	UC) N
	Debris Stable %	10	GE	sm.cobble (6	(mm81-128	20	V	alley: Cha	nnel Ratio	0-2	2-5	5-10 1	0+) N/
12	COVER: Total %	15	GE	Larges Ige. cobbie II	128-256mm			and Sta	00 10 Se	Dry	5	M	H Flo
10	Comp. Dp Pool L.O.D. Eoulder I			boulder (>25	(6mm)	36		lood Sigr		.6	Braide	d Y	(N)
A	100% 35 5 55	15 5	1	Bedrock (R)	and the	0	B	ars (%)	45	pH		O (pt	(m)
-	Crown Glosure % 10	C Aspect	5	Deplom) 64 C	Compactio	ALL DESCRIPTION OF THE PARTY OF	VS: W	ater Temp.I	517	Turb lem l	44	Cond (25	*C1
10		DISC	HARGE			1.6	1		REA	CH SY	ABOL		
3	Parameter Value	Method		Specific Data						(Fish)			
Q.	Wetted Width (m) 3.7	-1	33	3.9 4.2	4,4	1	1						
1	Mean Depth (m) 21	MS	14	22 26 20	28	-	1			1			
÷	Mean Velocity (m/s) D.22		50	37. 51 29	57		1						
39	Discharge (m <sup>3</sup> /s) D.13		200	-11-31-01			fWidth.	Valley:Cha	nnel,Siopai			lBe	d Materi

	的意志是自己		FISH SUM	MARY			STREAM/VALLEY CROSS-SECTION
TC:	Species	No.	Size Range(mm)	Life Phase	Use	Method/Ref	L ILooking Downstreami B
3	DV	6	133-14B	T	R	EL	BEANIMETRIC VIEW
1938	CCG	9	64-104	JA	R	EL	
城				1	8		
1			and services			<u>1</u>	
636	(				-		
12.8					-		1 - 000 000
1							- 900 00 0 00
10					-		12 0 02
15					-		
15-35					-		
1923		_	14				COMMENTS
1200	Channel	Stat	bility Debris	Manana	men	Concerns	Obstructions , Riparian Zone , Valley Wall Processes , Etc.
11-11	*****		and Clineare		men		L coshocions L.A. Ripanan Zone L., Vaney Wait Processes L. Etc.
2.00	1		h look	87 S	1	11	- 1- 6 4 + 1 /
79:78	Cr			5_V.	٢	lashy	The large boulders stacked up
日本		20	jainst 1	rees	-		
2.24		~			_	71	
	EU	1.0	lence,	many	9	al sic	de channels + + baded trees
1.00		-	The second se		-		
Z	~005	1	boulders	have,			associated with
- 41.12	-1		A. 115	10 - 9			Grandel
0.110	p	0.4	os "H-	12 - 1	ad	cinq u	patream & end of survey site
5.0		0		14.	00	king te	surards mouth Edited by
3	EF	10	r NOm	; Frah	h	ave be	en preceived in 10% for malin Date YMD

(f



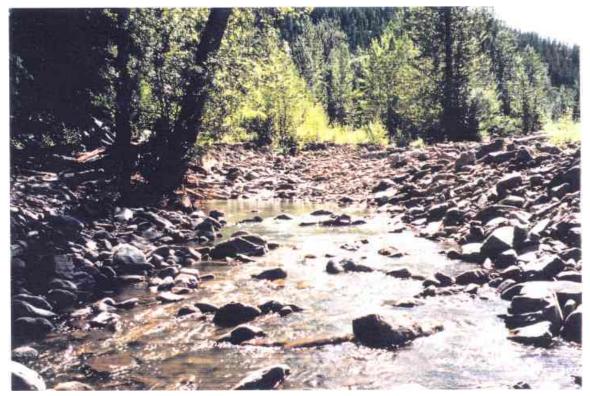
Site 49; Frank Roy Crk. (Looking upstream at end of survey site)



Site 49; Frank Roy Crk. (Downstream view towards mouth)

Stre	am Name (gaz.) 1/ 10 00	asmed (	neek		liocali							Ac	BSB	V2	2	Melho
	tershed Code 12 307	11 11 5		I. L. Y.	I L I I	La val	M II	11	. 4	Reach.	No:	Leng	thikm			
	ation trom in	inte	Fu (	och	-up-	Map#	53	0	19	BILE NO	15	3 Ltha	irv.lm	100	)	GE
5	fream					U.T.M.	10.53	32 2	17/1	8 Fish C	ind (Y	) N	C	Field	21	
	YMD IL UIEDIS	Time 13, 55	Agency	FFIC	W. GHIM	14/	Photos		· · · · · · · · · · · · · · · · · · ·	O Air Pho			8.5		an au	
C	PARAMETER	VALUE	METH.		and a second second second	0	SPECIF	IC D	ATA				0	BSTR	UCTIO	ONS
Ŧ	Ave.Chan.Width (m)	27.5	T	23.1,1	6.1,27.2	,25,2	40.7	-					C	HIM	Туре	Loc
30	Ave.Wet.Width (m)	6.8	F	4.4.5	6.6.31	12.7,4	.8									
	Ave.Max.Riffle Depth Icm)	21	MS	16.2	6,14	20,0	25		_					(T., .)		
. 1	Ave.Max.Pool Depth (cm)	40	MS	37,3	53.61 1	37.89								2		
A.	Gradient %	3	CL	C	BED MAT	ERIAL		6	С		BANKS	1		1		1
3.	% Pool [ 10 Rittle 5 5 Run	35 Other	Gé	Fine	Clay, sill, sa	nd (<2mm)	5	5		Height(m)	12-5%Un	stable 20				
1	Side Chan % 5% 0 0-10	10-40 >40	GE		er smail 12-1	6mm?	1	5	- 32	Texture	FG	L) R				
		5-15 215	GE	Grav	large is 6-	Sámm).	10	10	4	Cor	vinement	EN C	O FC	00	ÛC	S NI
	Oebila Stable %	417	GU,		Se sm.cobbie	(64-128mm		20		Valley: C	nannel Rati	0 0-2	2-5	5-10	(10+)	) N/
	COVER: Total %	20	GE		al ige.cobble	(128-255m/	mi 💕	35		STORES.	Tenter	Dry	T	м	н	Flo
影		w in Veg Over Veg			boulder i>:		25	25	3	Flood Si	gns Htim	.5	Braid	led	Y 2	N
2	100% 30 10 50	15 T	5	Beg	rock (R)	TANK THE	est -	-		Bars (%)	40	pН		0	(ppm)	
線山	Crown Closure % 5	C Aspect	N.		(cm) 65°	Compact		DH (	(あ)	Water Temp	.en 17	Turb.(cm)	61	Cond	125*CI	
il.m.		DISC	HARGE	Aurora eterriteta					1		RE/	CH SYN	BOL	0		
W.	Parameter Valu	e Method		1	Specific Data							(Fish)				
5	Watted Width (m) 4.0	T	147	3.9	4.1.4.	1,4,4										
1	Mean Depth (m) D.2	4 MS	.20,.	25,	32,19,	25	20. <sub>200</sub> - 1									
	Mean Velocity (m/s) 0.4		1914		10, 16:1.	295/10	,314	10.				0				
	Discharge (m3/s) 1.3	1		-1					Widt	th,Valley:Ch	annel,Slope	8 E -			Bed N	Interi

C Sphort No. Size Range (mm) / 2/11 / Use (110 (R)) L 5 DV 3 143-168 J R EL - PLANIME	VVALLEY CROSS-SECTION C
CCA 12 41-107 J.A K GL - Kal	auportion /
COMMENTS Channel Stability _, Debris _, Management Concerns _, Obstructions _, Ripsrian Zone More Side channels upstream of Site	a 🔄, Valley Wall Processes 🛄, Etc.
3 Braided westream of are Braided @ month 4 Contried upstream of Grade	١
Photos: H-19: View of upstream and off site 20 and near mentin 5 EL for 150m; both DV f CCG have been pr	evened in 10% formation
	Edited by: Date YM D



Site 58; unnamed (Looking upstream at end of site)



Site 58; unnamed (Downstream view of end of site + mouth)

şîr	eam Name (gaz.) UN	ina	ma	2 C	nee	1c	ilo	cal)				1			Ac	Cess	V2	2	Metho
	tershed Code 2131				41	11	a a	1 1 2	Prat	is real	1 m	Reac	No.		Lang	thikm			
-	setion to meter		_		re r	cek	101	-15	Mape	13-	0 -	7 SUM	0.2	63	Lina	urvim	15		GE
	risberly						3.00		U.T.M. 7/	1.53	126	716 FIAD 3	ard	Y	(N)	C	Fleid	1 And	itsi.[
)ai	FYM0 912 616	101	Ime	2:20	Agenoy	FJ	Crow	GH/+		notos H		6-17AIT PI					AUG-COLUMN	Carden.	
C	PARAMETER		VAL		METH.					ECIFIC	DA	TA		1		120	BBTB	UCTR	ONS
	Aye.Chan.Width Sm)	10	1.	15	T	19	, 0,0	1,1.11	0.7							C	Httm)	Туре	Loc
10	Ave.Wet.Width (m)	BUILD BUILD	1.	15	Ť	1.9	0.	2.1.1	0.7								-		1
1	Ave.Max.Riffle Depth	(cm)	10	A	MG	NO.	7.1	In Th	12										
	Ave.Max.Pool Depth	(cm)	20	0 1	MS	39	135	,14.	10.										
1	Gradient % With the	WS//A	1	2	NL	C	S.S.F	EDIMAT	ERIAL	n 94		C	BA	NKS					-
5.5		840	01	ber	-		Finas	day,sill.sa	nd (<2mm)			Heightim	1	SUnst:	able	1			
	and the second sec	Sector Sector		12 MORE			and the set	small (2-1	6mm1			Texture	F	G	LB				
1.5	Area% of lo	Contraction of the	No. of Street, or	1816		13	GIN VIE B	large it 6-		1000	-	C	antiner	ment	EN C	O FC	oc	UC	N/
1	Debita Stable %					in the second		smicobble	(64-128mm)	S.M		Valley: 0	hanne	s Ratio	0-2	2-5	5-10	10+	N/A
â	COVER: Total %					圖	4.141.5	Ige.cobble	(128-286mm)				Hage		Dry	L	м	н	Floc
	Comp. Dp Pool L.O.D.	Boulder	In Veg	Over Veg	Cutbank	199		boulder (>2	(56mm)		-	Flood S	COLUMN 2	Contraction of the local division of the loc	1	Braid	ed	Y	N
	100%					1.06	i uroc	K (R)			-	Bars 1%	2		pH	1	0,	(ppm)	<u> </u>
-	Crown Closure %	30	0	Aspect	N		D <sub>ao</sub> (cm)	personal second	Compaction	LM	H	Water Ten	D.I.C.I	71	Turb.(om)			125*CI	
			( and a second		HARGE	And in case of the local division of the loc	30		1.0.000000000	1000		and a constant	1	READ	CH SY	MBOL	C. C		
0	Parameter	Value	M	lethod			Spec	ific Data							(Fish)				
1	Wetted Width (m)		1																
	Mean Depth (m)		1	2	2000														
24	Mean Velocity (m/s)		1					14											
	Discharge (m <sup>3</sup> /s)		1			-	_				Ö	Vidth, Valley:C	hannel	(51op#)	1			IBed M	steria

C Shutter No. Size	USR SUMAREN Range (mm) Elis (Phase Use (Moleco / 1	(Ne construct STREAM/VALLEY CROSS-SECTI Aron photographs) (Looking Downstream) PLANIMETRIC VIEW	on ⊠
Channel Stability Stv@m Stv@m USeta Photo #16 #17 Note. Di Ve	Palans alongs mass braids a la bon -> whing downstrees -> by raid crossing dn't camp out Ad	1 ctream curvey. Some creek.	ssong it Rel 7 M.d.
2- 			Edited. by: Date Y M D:

14



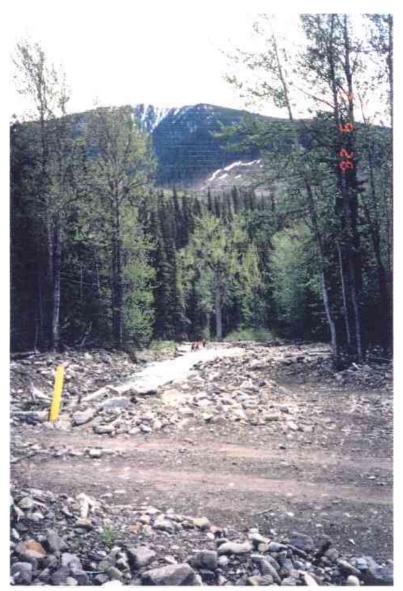
Site 63; unnamed (Downstream view of survey site)

81	eam Name (gaz.) ()	MM	ampel	Cree	(Acces	ss V	2	Metho
W	itershed Code 23			181	Beach, No. Length	km)		
Lo	cation from	10	ad cross	-	t month Mape 93-0110 Sile No. 64 Libeury	(m) 15	0,	
	20100-112			- 1	UT.M. 10 5306. 61727 Flah Cate, Y (R) C	3 Fleid		Hist.
) <sub>A</sub>	WYMD 912 016	0121	100 14:30	Apency	FJ Drew 1+H/GH /17/10 Photos 1-9/10 Air Photos	- Instantion		
C	PARAMETER		VALUE	METH.	SPECIFIC DATA	COBSTR	UCT	ONS
	Ave.Chan.Width Imi	公治	44.8	T	48.4, 42.5, 45.3, 37.8, 50.1	CREAT	Type	Loc
2	Ave Wet Wigth Im1s		41.3	T	6.6, B. (112.1)6,3,82	-	-	-
	Ave.Max.Riffle Depth	(cm)	51	19	42 40 43 73 50,62 50, 37			
i.	Ave.Max.Pool Depth	(cm)		. 2	MA			
3	Gradient %	- S. A	6%	100	C DED MATERIAL & C BANKS		10.555	
1	% Pool Riffie .		Other		Fines clay sill send 1<2mm Heightim Si feUnstable 75			
	Side Chan % 0	10 10	40 240		amali (2-16mm)		-	1
	Queons Argess	r s Vie			San large It 8-64mml 5 Confinement EN CO	FC O	c fuc	NI
	Stable %		and second chicks	i	si am.cobble 164-128mm) O Valley: Channel Ratio 0-2 2	-5 5-10	0 10-	N//
	COVER: Total %	4	(5%		In right lige cobble (128-256mm) 25 Stab. Dry I	_ (M	н	Floo
244	Comp. Dp Pool L.O.O.	Bouider	In Vog Over Veg	Cutbank	A REAL PROPERTY AND A REAL	taided	Y (	N
	100%	100			Badroox (R) pH	0	dopm)	
化	Crown Closure % (C.	5%	C Aspect	SE	Deolom) 55 Compaction L M H 2 Water Temp. 1*CI & Turb.(cm)	Conc	1.125*0	
in the			DISC	HARGE	REACH SYMB	OL		
	Parameter	Value	Method		Specific Data (Fish)			
	Wetted Width (m)	62	T	7.1	5.6, 6.2, 5.9,			
-A	Mean Depth(m)	.52	ms	52,	50, 0.60, 0.45, 0.55			
1	Mean Velocity (m/s)	1.91	F	6.1/0;	59/10, 6.8/10, 4.2/10, 4.2/10			
	Discharge (m <sup>3</sup> /s)	4.62	1		Width,Valley:Channel,Slopel		Bed N	Asteria

		STATISH'S DIMINIAN		STREAM/VALLEY CROSS-SECTION
C	No.	Size Range(mm)	Philase Use Minister Ha	H(m
1				PLANIMETRIC VIEW
-1				
			J	
灣				- XF
1				
				- 100 porto addi-
4	_			
-1450 -044				COMMENTS
	Channel Sta	bility Debris D. 1	Vacanamant Concerns	Obstructions, Riparian Zone, Valley Wall Processes, Etc.
100	TAINOL		ing I A at A	aurna w/ wts of surface brakes ( willes
0	anna	10 kg	JEIG FALL I	
2	Nada		usobality sp	
3	Pictu	AVOSNUCAN Devin	attended	- HUUB were too rapid. U
1.00 2.00	FILTU	105 - 10000	st ann then	2 OF CITCP
124				
(四)	0.000			
4				
5185				
V				Edited by
1.0				Date Y M D

) L

r.



Site 64; unnamed (Downstream view from road crossing)

					SIN	EAM SURVEY P	OHM							
8tr	eam, Name (gaz.)	Inva	med	Creel	k lie	cal				_	Acc	055	12	Metho
	terahed Code				1100	Krinken b	to to L	1.1	Reach N	0.	Leng	(hikm)		
	Callon DONNETY	- 25	of no		crossiv	Map#	93-0	2/1	SILA No.	1000	Lthe	rv(m)	100.	SE
	and the second of the	SHOWL	م الم الم الم الم الم الم الم الم الم ال	a	409.00	0 U.T.M. /	0.5295	6171	7 Flah Cat	d Y	N	°51	Field	Hist.
盲	VIGCIP ONY	012個	01:11	Apenoy	TJON	GH/HH HEATP	notos 4	16-	2 Air Photo		and in	1-5-10		
C	PARAMETER	210-11-	VALUE	METH.		Minister of the second s	ECIFIC	DATA				KEOL	STRUCT	TONS
	Amsternay/join.m.s.		5.78	10 T	3.3.	5.5. 10.2.4	t. la	nR	122			C	Ht(m) Typ	e Loc
4	Alesie (swinger miles)		5.48	15	3.3	515 12.9.4	11	246	16.37	521	7-10-0			
1	Ave Max Prose Depth	(cm)	68.19		172,74	60 182 - 46-3	9	10		1	<i></i>			
ł	Ave.Max.Pool Depth		17.10	MSSI	28.36	, 50.55160	2,50	0	·41) 430	1 49 530	र्म नै			
	Gradient %	in the second	0.5	CL	C Mar	BED MATERIAL	\$	C	and the second se	BANKS		1		
1	- Average - Average -	制	dother	GE	FINES	clay.silf.sand (<2mm)	28865	5	Heightim) 6.	55 %Unat	able K5			
	And the second state of th	and the state of the second	40 240			small (2-16mm)	(語))	1	Texture (	FG	LR			
i.			18 516	-	Graver	arge (18-64mm)	5	1	Conti	rement	EN CO	FC	oc (u	Q N/
100	Stable %		70%			sm.cobble (64-128mm)	0	100	Valley: Char	inel Ratio	0-2	2-5	5-10 10	S N/
橋内	COVER: Total %	1 22	40%		A. Budut	ige cobble (128-256mm)	0	1	<b>在一些问题</b> 情	(e.	Dry	L	(M->H	Floo
115	Comp. op Pool L.O.D.		n Veg Over Veg	Cutbank		boulder (>256mm)	1	12	Flood Sign	s Ht(m)	1.10	Braide	d Y	FN
ŝ	100 × 45 35	0	5 5	ID-	Badio	K (R) C S S S S S S S S S S S S S S S S S S	D D	-	Bars (%)	0	pH		Ouppr	w]
Î	and the second se	TU I	Aspect	D.X	Deplem	Contraction of the second second second		1	Waler Temp.1*	051	Turb,(cm)	CO	Cond.125*	
			CF 17-1	HARGE	pagel au		h.J	12	Consent Consent		CH SYN	BOL		
語の	Parameter	Value.	Method		Spe	cific Data		1		2011-02	(Fish)			
	Wetted Width (m)	4.3	T	A 4	4.0 4	2.4.1		1						
	Mean Depth (m)	. 41	-		431.41	44,31,47,81	. 32. 37							
100	Mean Velocity (m/s)	. 444 -5			m, 26.04/		V 2	1						
100	Discharge (m3/s)	.59	1	1		1 100 - 11-1		IWid	th,Valley:Chan	nel,Siqpei	1		Bed	Materia

2	DFO/MOEP	
	STREAM SURVEY FORM	٨

産し	1. 操作	60	ा महीन सेंग	distants.		STREAM/VALLEY CROSS-SECTI	ION V
C)	SACLE	No.	Size Range(mm	a) Catter Phillerer	Use Method / A	L (Looking Downstream)	R
	- dre	bđ	No Figh	Cougest		PLANIMETHIC VIEW	
20							-
10						COMMENTS	
123	21		ut a fer	wegh.	Well W/ Ll 13/an	, obstructions: , Riparian Zone , Valley Wall Processe n bants, but into vegetation d due to fugh water level un habitat	s 🔄, Etc.
456	Lard	ei jei	the two is the second		shockin		my)
- Tu	FIC	inte	5 1004	cing u	pstream	from near mobilin or clear	
清整:							Edited by
5.0							Date YMD

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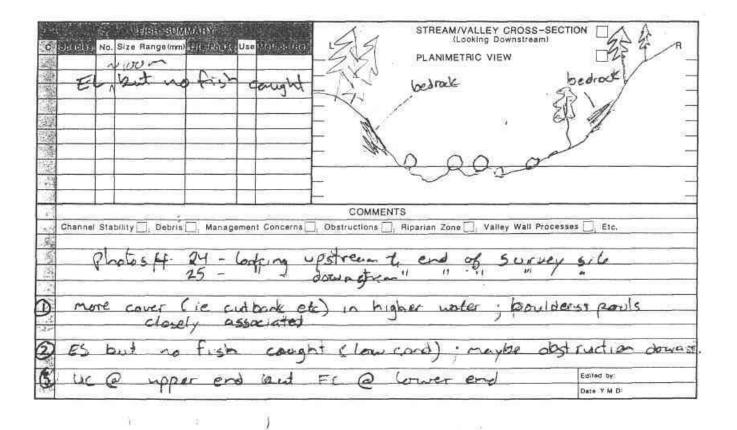


Site 66; unnamed (Looking upstream from survey site)



Site 66; unnamed (Looking downstream from survey site)

SÌÌ	eam Name (gaz.)	nna	mpel		(local)		Access	VL	4 Metho
	lershed Code	1.1	1 Det	111	A PERINDER PRESERVED	Reach No.	Lengthikm		6. 10
.0	cation Farm	(med	200	-5	ream for Mars 23-0/1	5. BILE NOKE SB	Lthaurvin	1 Par	D 2E
	100 -				U.T.M. 10.5266.6		C. C	[leld]	Fillar.
1	6 9 MO 9 12 018	216	1 20	Agenoy	FT Photos AJ-2	4 35 Air Photos	/		
¢	PARAMETER		VALUE	METH.	SPECIFIG D	ATA	1.50	BSTAL	<b>JOTIONS</b>
	Ave.Chan.Width Im)		13,2	1-	151, 16.2, 15.5, 11.	6.7.6	ç	Hinn:	Type Loc'
2	Ave.Wet.Width image		6.6	T	8 63 7.1, 6.6	** 48	2		
	Ave.Max.Riffle Depth	(cm)	42	MS	55. 48.32 24 47	Althreas	-		
	Ave.Max.Pool Depth	cm)	16	MS	15, 17, 18, 18, 21				
	Gradient %	1423年	5	CL	C REPERT MATERIAL	C BANKS			
1	SPOOT OFUTTE BO	Hùn 1	Other	GE	. FIDER clay.silt.sand (<2mm)	Height(m) 70%Unstable	10		
23	Side Chan.%: o[]o	joluho-	40 240	GE	small (2-16mm)	Texture F G (L	XA		
3	Areas old	-5145-	Usis Cas	GE	Graves large (16-64mm)	Confinement E	N CO (FC	) oc	UC N/
12	Stable %	11.2	25	GE	am.cobble (64-128mm)	3 Valley: Channel Ratio	0-2 2-5	5-10	10+ N/A
1	COVER: Total %		10	GE	ige cobble (128-255mm)	S(190)	Dry (L-	7 M	H Floo
5	Comp. op Pool L.O.D.	Boulder In	n Veg Over Veg		boulder (5256mm)	Flood Signs Htim)	5 Braic	ed	YN
Y	100% 25 5	60	T 5	5	and ock (All)	Bars (%) 25	pH	04	ippmi (
28	Crown Closure %	1	Aspect	E	Depicmil 60 Compaction L BH	Water Temp. ("C) 15 Tur	o,iem i	Cond.I	26*Cl
59			DISC	HARGE			SYMBOL	8	
	Parameter	Value	Method	Constant of	Specific Data	(F	(sh)		
潮	Wetted Width (m)	3.5	T	4,4	1, 7.1, 2.8 2.8 3.7				
	Mean Depth Im)	0,38	MS	A.	47 19 62 42				
T.	Mean Velocity (m/s)	0,23	F (ion)	35	35,34 56 54				
0.2	Discharge (m <sup>3</sup> /s)	0,23	P	19.00		(Width, Valley: Channel, Slope)	盘	- 14	Bed Materia



#### ŝ



Site 68; unnamed (Upstream view of site with ford)



Site 68; unnamed (View of downstream end of site)

Str	eam Name (gaz.)	one	Jy.	Ê.			lo	cal)						Ac	cess	W.	21	Method
Wa	tershed Code 2.3	217,4	18	31 1	1.1.1	1.1	14.41	l a au	Land.	i inspekt	00.03	Reach	No	Leng	thikm		0	
_	cation								MRP	93.1	0/9	Site No		Lths	urv.(m)	10	U	3-
									U.T.M.	10.53	121.61	16 Flat Ca	rd Y	(N)	C1	Field	PKI	Hist.
Dal	XMD 917 018	0141	Time	540	Agency	F	Crew	GH/	1+1+	Photos			and a state of the		-	a day beau		Real Property lies
C	PARAMETER		VAL	UE	METH.	1				SPECIFIC	DAT/	4	100-C.C.		O	BSTR	UCTIO	ONS
	Ave.Chan.Width (m)	man al				-									C	Him	Type	Loc'n
	Ave.Wet.Width (m)	No.																
	Ave.Max.Riffle Depth	(cm)																
	Ave.Max.Pool Depth	(cm)																
4	Gradlent %			a. 1		C	1000	ED MAT	ERA	%	C	51A	BANKS					
	% Pool Riffle	Bun	Ot	har			Fines	cisy.silt, se	and (<2mm)	6		Height(m)	%Uns	table				
	Side Chan.% o	-jo[]to	0-40	]>40			1.18	sma4 (2-1	(6mm)	ALC: N		Texture	FG	LR				
15	Area% of			] 216 [] ;		15		large 116-		10	-	Con	finement	EN C	O FC	00	UC	N/A
121	Debris Area% 0 0			-		152			(64-128mm			Valley: Ch	annel Ratio	0-2	2-5	5-10	10+	N/A
12	COVER: Total %		-			嘉	Larges	ige.cobble	1128-255m	n)			λ•to-	Dry	Ľ,	м	H	Flood
135	Comp. Dp Pool L.O.D.	Boulder	In Veg	Over Veg	Cutbens	漢	100 A	boulder (>	256mm).		-	Fiood Sig	COLUMN STREET,		Braid	ed	Y	N
100	100%					100	Bedroc	k (R)				Bars (%)		рH		0	(ppm)	
in.	Grown Closure %		C	Aspect		一般	Deolom	C	Compact	on L M	н	Water Temp.	101 15	Turbiami	- N	Cond	125*01	1
- 33			-	DISC	ARGE							111111111111111111	REA	CH SY	BOL	10000		
1.3	Parameter	Value	M	tethod			Spe	cific Data						(Fish)				
12	Wetted Width (m)																	
1943	Mean Depth (m)			1		- 50				93								
-98	Mean Velocity (m/s)																	
志	Discharge (m <sup>3</sup> /s)			(							1Wi	dth,Valley:Cha	innel,Slope	10			Bed M	(atorial)

1	DFO/MOEP
	STREAM SURVEY FORM

FISH SUMMARY STREAM/VALLEY CROSS-SECTION C Species No. Size Rangetmm Life Phase Use Method/Ref. Ľ PLANIMETRIC VIEW COMMENTS Channel Stability ..., Debris ..., Management Concerns Obstructions . Riparian Zone . Valley Wall Processes , Etc. connected pools only (V. Low F consists Steem ot onte an ~ socm) Pools & IDVO PLOW PLOW , Tu Same H (10-15 im 0 DM one Photo # 4-20 View pool 5 in OFI it I = dried bed underground Secpart - there applais to be Connecth Poola Edited by Date Y M D



Site 87; Moberly R. (View of occasionally interconnected pools)

Stre	eam Na	ime (gaz	z.)	Mob.	orly	v			(10	cal)					Acc	0855	JZ	-	Metho
Nat	terahed	Code	Ei a		1	1 18		11	E L D	LELLEL	L D	10	Reach	No.	Leng	th(km)		_	
.00	ation	Fro	2	65:0	he	da	inste	0-	Gr	100 - Map#	92-	0/9	Site No	88	Ltha	urv.(m)	166		35
											0.532	1.617	S Flah Ca	rd 🐑	) N	C	Fleid	J.	list.
at	e YMD	912	OR	016	Time (	3:20	Agency	9090	Crew	HH/6H/ F	hotos 🕴	22.	Air Pho	tos					
C	1	PARAM	ETER		VAL	UE	METH.		-102-5-1	S	PECIFIC	DAT	4			0	BSTR	UCTIO	ONS
14	Ave.CI	han.Widt	th (m)		2	2.2	T	2	3.9	.21.9 22.	6 1	74	25.4			C	Ht(m)	Type	Loc'r
	Ave.W	et.Width	(m)		8	.6	7	12	3.5	6.8 6.9	, 13.	1	7.8						
	Ave.M	ax.Riffle	Depth	(sm)	18	3	1.5	16	5 15	22.13 2		1							
	Ave.M	ax.Pool	Depth	(cm)		0	MS	7		3.61 36.9	4								
	Gradie	ent %				5	CE	C	I' E	ED MATERIAL	9% %D	C		BANKS			- 4		
1	% Pool	1 S AIM	Te La (	Aun Li	50	ther	GE		Fines	clay,silt,sand (<2mm)	10		Heightimi	70 SUnst	able 10				
1	Side Ch	han.%	007	0-10 10	-40	>40	GE		articles.	small (2-) 6mm)	Ø		Texture	FG	L)R				
14		Area% (	000	0-50	5-15	3>16	GE	1	Gravels	large (16-64mm)	20	F	Con	finement	EN C	O FC	OC	(OC	N/A
- 2	Debris	Stable	%		22	-	GC	1.10	1.15.2	sm.cobbie 164-128mml		P	Valley: Ch	annel Ratio	0-2	2-5	5-10	(10+	SN/A
	CO	VER: To	tal %		-	15	GO	13	Larges	Ige cobble (128-255mm	25		19 St	ege to the	Dry	3	M	н	Floor
		Dp Pool	L.O.D.	Boulder	In Vog	Over Veg		- City	書店	boulder (>256mm)	0		Flood Sig	Contraction ( Manufacture ( 1979)	.5	Braid	ed	Y	NY
	sum 100%	1 6	10	125	5	150	6		Bedroo	k (R)	5		Bars (%)	35	pH		0.	(mqq)	1
-		Closure	100	100	C	Aspect	6	323	Daplom	I lo l	the second se	)H	Water Temp	-	Turb,(cm)	94	Cond.	25*01	
の森			<u></u>	1	-30.79	DISC	HARGE	100.00	1.30			-	- Contraction	REA	CH SYN	ABOL	-	-	
100	P	aramete	r	Value	N	Aethod		-	Spe	cific Data					(Fish)				
3	Wetter	Width	(m)	73		T	6.9	1	1.3	2.3 6.9 7.9	1								
12	1.	Depthim	000000	DE	7 7	15	17.13	5	12 20	1 22									
1	Sector Contractor	Velocity		0.5	F	-Cidmat	24	15	3 19	20 20									
		irge (m3		0.46		2			- 1.4			IW	dih,Valley:Ch	annel,Siope)	c 🙏 –			(Bed N	Atecial

C Suba	No. Size Rangelm	MAR ( M		STREAM/VALLEY CROSS-SECTION (Looking Downstream)	- Annual
- 101-	1 106	A		- ZA PLANIMETRIC VIEW	
1938 - I	11 100		- Device	- / Carlos	11 -
					11.
1.10				5r (	de la
19	Et to	1 wor	ha		× 1 1.
	only	1 649	caught	in the second se	.)
300	- Good (	induction	*		/
12	- Sans on	14	a pin @		
	2.80.				
199	6			COMMENTS	
Chan	nel Stability Debr	is Managem	ant Concerns	, Obstructions Riparian Zone Valley Wall Processes	, Etc.
老					
1 AL	daotos #	23 - 600	Einco	downstream end of site.	
2	5	22 -	· U.	upetream v v .	
	more conft	ind al	porce 6	cidae	
11				<i>J</i> .	
LEV	idence a	old for	side	channels ( maybe not in high	er water)
		0		1	
				Ēd	iled by:
				0.	IN Y M Do



Site 88; Moberly R. (Upstream view of site with bridge)

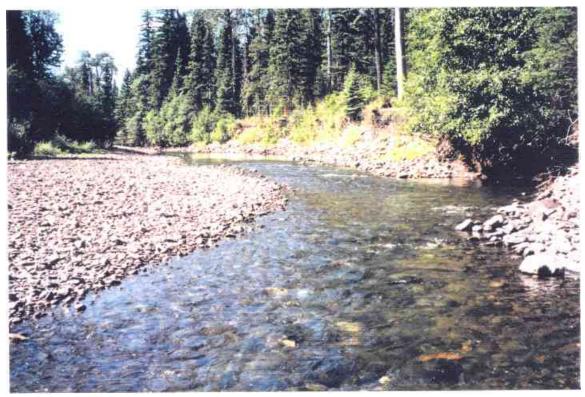


Site 88; Moberly R. (View of downstream end of site)

			- 11		STREAM SU	RYLIF	OHIM		_		1 00	-			_
Stre	am Name igaz. M	000	cheg		(local)						Acc	855	VZ	Ą	Aetho
Vale	rahed Code 2,3 c	2171	481	14 1 4	1111111	1.1.1.1	111	R	each I	10.	Leng	th (km)			
.ocs	Mon Start	ale	ant	lume	e w/Frank	Map#	3-01	9 8	te No.	89	Lthau	rv.(m)	100	> <	se
R	oy to 100m		2, near				5355.6	FULLE	ah Ca	rd (Y)	N	c	Field	J H	at.
ate	XMODI2 0BC	151	1me 10.11	Agency	FS STON GH MH			748 4					- 34.00 ,114	21.412.54	i at his
C	PARAMETER	100	VALUE	METH.		SP	ECIFIC D	the second second				-#O	STRI	UCTIC	NS
B	Ave. Chen. Width (Im)		26.1	1	24.2 25.5 2	6.8.20.9	1.333	2				C	新油	Туре	Loc
	Ave WellWidth (m)		13.4	17	7692.90	10.9.3	8,4								
-	Ave.Max.Riffle Depth	(cm)	24.6	W/S	19 14 . 76.22	33									
	Ave.Max.Pool Depth		73.44	MS	45.68.59	,102,0	94								
	Gradient S		0.5	CL	C BED MATE	Structure and	.98	C		BANKS					-
-		Run 5	Other	GE.	Elnes clay, silt, sand	NOC PRODUCT OFFICE	010	Heig	ntim)	28 SUnst	able				
	and the second of the second	Col Vio	Contract of the Contract of th	JUGE	Sind Strange as mail (2-16)		10 10	Tex	ture	FG	D H	11110	1	_	-
		Contractor of the local division of the loca	that is made to be	IGE	Gravals	(mm)	7 25		Cont	inemant	EN CO	) FC	7oc	) LIC	N/
1	Area% 5 10 0	KN12-213	10	GE	sm.cobbie (6	4-126mm)	25	Val	ey: Ch	annel Ratio	0-2	2-5	5-10		N/J
120	COVER: Total %		25	Gi	lardes ige.cobbie II	and the second of the second second second	20 20	130		ga Steel	Dry	(L)	- M	-	Floo
200		Routet		Veg Cutbank	boulder (>25		10	Flo		ns Ht(m)	47	Braid	ed (	R	N
1	sum 100% 55 5	35	15		Bedrock (A)	No. of Concession, Name	-	the second second	5 (96)	15	pH	-	1111 - 12	ippmi	-
esc -	Crown Closure %	F	C Aspe	INE	Deoferni 4 D C	Compaction	L(M)H	1 510 510	r Temp.		TTO RESULT	102		(2510)	-
新聞	Crowit Glosure	10	10-200 to the base	SCHARGE	AND DOOLOUN T	Comparation			(c) and (c)	10	CH SYN		-	STRUCK!	
11	Parameter	Value	Method	Second Contern	Specific Data					REA.	(Fish)	DOL			
5.74	Vetted Width (m)	7,4	- Middiniou	12	- c.k - Dil	29	8.6								
100		0,25	MS	54	28. 15/26	1741	6,0					-	1	_	
-	Mean Velocity (m/s)		EIN		1.42/10 , 85/10. 135	1. 17 0/14									
1000	STREET, ST	1.9	FE	- iano	10/10/03/10/73	11/1-7/0		Width Va	lev:Cha	nnel, Stopal				Bed M	ataria
Life-	ARCHALD& THAT B)	1.19	F					and the second s	19 F 19 10	COLUMN STATE		ueto.	DEC 87	100200100	551

ABH SHUMMATY C Sport No. Size Range (mm) Click Piper Use Monourust 1 DV I (43 J R EL CCG 25 28-109 J, A R EL 24	STREAM/VALLEY CROSS-SECTION R (Looking Downstream) R PLANIMETRIC VIEW
	COMMENTS COMMENTS COnstructions Riparian Zone Valley Wall Processes L, Etc.
Man concerns Lots of que pools; small colobled F	ng towards upper end of site of downstram and of survey site (now of white previne habitats runs (dep) gravels.
24 84 78	Édited by: Date Y M D:

) )



Site 89; Moberly R. (View of upstream end of site )



Site 89; Moberly R. (Downstream view of site with confluence of Frank Roy Crk.)

				STR	EAM SURVEY F	ORM								
ou in Name (gaz.) Mu	sheil	xK		tic	cal)					Ac	cess	V2	M	letho
Water and Gode 12,3,0	7,4,4	181 1	n l a	1111	Torar Landa		1	81.00	56	Leng	(hlkm)			
SUM u	upsh	eam	, th	om k	midge man	93-4	19	isite as	92		1220	100	m, E	50
Cupsheam of la		poot)	)			.5383.	617	2日前 望	IN P	N	C IL	adlan		14
91201731	DING	14:00	1486-107E	FJ	GH/AH/ Ph	otos H-1	2-1	3 Air Pho	tos					-
PARAMETER		ALUE	METH.		the second s	ECIFIC D	and the second second				and the		13(09)	315/
average engineer as	2	.8.3	+	32.9.	343,25.4,	37.76	13.1	2			C,	allen.	Туре	Loc
Treader manages	1	7.8	T	13.9	20.6, 20.9,11	3,14.	2							
Ave.Max.Rillle Depth (c	:m)	iB	MS	32.1	9, 29, 24, 14	6					.42			
Ave.Max.Pool Depth (cr	n) 7	59	115	69,7	0,72,65	168 -					1			<u>(</u>
an ora		1	CL	C	HERRY SERVICES	%	C		BANKS					
El San 1 5 100 3 D 1	55	One St.	GE	Party.	clay,sill,sand (<2mm)	15	1	Heightimi	70% Uns	table 20	1. m.			
La presente a la compañía	<b>H</b>	- Hit	mG.		small (2-16mm)	: 5	1	Texture	FG	(L) A	100		-	
1 40 A 5 1/4 1	Tar		all	in the	large (16-64mm)	10	微	Con	finement	EN C	O FC	oc	(UC)	N/
Stable %	1.	10	Giv		am.cobble (64-128mm)	20	到高	Valley: Ch	annei Ratio	0-2	2-5	5-10	10.	N/
COVER: Total %	3	25	GE		1ge.cobble (128-256mm)	30	all a			Dry	L	M	H	Flo
	ouider in V	log Over Veg	Cuthenk		boulder (>255mm)	15		Flood Sig	ins Httm)	.50	Braide	ed	YON	D
100% 35 5 1	511	25	20	1000		5		Bars (%)	5	pH		04	(mqq	
Crown Closure % 15	R	Aspect	N	Deolon	1 45 Compaction	L(M)H	幕的	Water Temp	1001 12	Turb.(cm)	72	Cond.(	25*G)	
		DISCI	HARGE		1/				REA	CH SYN	BOL	1		
Parameter V	/alue	Method		Spe	cific Data					(Fish)				
Wetted Width (m)	5.0	T	129	14.3	14.9,15,617.1	2								
	137	M4	AL.	.43,34	536 31									
	.67	F(10m)	154/10	134/10,	18/10, 145/10, 15	5/10								
	.79	F	1				Wid	th.Valley:Ch	annel,Slope	0.5		0	Sed Ma	teriz

COMMENTS         Channel Stability         Debris         MMU         Z. 40-242         J. C.G. 7         MW         Z. 40-242         J. A. R. EL         MW         Z. 40-242         J. A. R. EL         MW         Z. 40-242         J. A. R. A. G.         MW         Z. 40-242         J. A. R. A. G.         M. W. Z. 240-242         J. A. R. A. G.         M. W. Z. 240-242         J. A. R. A. G.         M. W. Z. 240-242         J. A. R. A. G. M. R. EL         M. W. Z. 240-242         J. A. R. A. G. M. R. EL         PLANIMETRIC VIEW         M. M. Z. 240-242         Guarnel Stability         Debris         Management Concerns         Obstructions         Riparian Zone         Valley Wall Processes         Etc.         W. W. C. Stability         Debris         M. W. T. Z. M. W. attributer         M. W. Fill         Most         A. Cohis bap         A. Cohis bap         Most         A. M. W.		ં તકારી વધાય	distant in the second		STREAM/VALLEY CROSS-SECTION (Looking Downstream)	
I CCG 7 32-82 J, A       R       R       EL         MW 2 240-242 J, A       R       AG       In         MW 2 240-242 J, A       R       AG       In         I I I I I I I I I I I I I I I I I I I	C Specific	No. Size Range(mm)	Life Prinse, Use	(Alibury (m))		F. R
MW 2 240-242 J.A R AG MW 2 240-242 J.A R AG COMMENTS Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Detc. Modes: # H - 13 Lools instewards upstram end of Sit # H - 13 Lools instewards upstram end of Sit # H - 13 Lools instewards upstram end of Sit # H - 13 Lools instewards upstram end of Sit # H - 13 Lools instewards upstram of Sik # W - 12 - MW 2 took length Scales MW 2 took length Scales MW with Processes # Mode and the Site MW 2 took length Scales MW with Processes # Mode and the Site MW 2 took length Scales MW with Processes # Mode and pool actually Sou dog runs # Mode and pool actually Sou dog runs # Mode and pool actually Sou dog runs	1 CCG	7 32-82	JA R	EL	PLANIMETRIC VIEW	Ц _
COMMENTS Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc.	MW	2 240-242		AG	- m	_
COMMENTS Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Etc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Detc. Channel Stability Debris Management Concerns Obstructions Riparian Zone Valley Wall Processes Detc. Channel Stability Debris Management Concerns Dobstructions Riparian Zone Valley Wall Processes Detc. Channel Stability Debris Debris Management Concerns Dobstructions Debris Concerns Riparian Zone Valley Wall Processes Debris D					-'0	
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# 4-13 Look ingtowards upstream and of site # 4-13 Look ingtowards upstream and of site H 4-12- downstream of site 25strmated 230-40 A Cropish kept -7 completing MW > took langth scales MW - prot 2 Most deep pool actually slow deep runs Edited by: Edited by:	Channel	Stability Debris	Management	Concerns		Etc
# 4-13 Look ingtowards upstream and of site H 4-13 Look ingtowards upstream and of site H 4-12- downstream of site 25strmated 230-40 A Cropish kept -7 completing MW > took length, scales - MW - prot 2 Most deep pool actually slow deep rung of size rowse - 30-40 Edited by:	mo	76.:				1
HU-Z- IEL for 100 m / Fly-fished deep pod downstream of Site 29stimated 230-40 & (notion kept -> completer 2 MW > Fook length scales . MW ~ poot 2 Most deep pool actually slow deep nums of site raise Edited by:						
HU-Z- IEL for 100 m / Fly-fished deep pod downstream of Site 29stimated 230-40 & (notion kept -> completer 2 MW > Fook length scales . MW ~ poot 2 Most deep pool actually slow deep nums of site raise Edited by:	4	# 4-	13 1 -010	malatio	all water and of the	
1 EL for 100 m / Fly-fished deep pod downstream of 5.12 28stimated 230-40 & (notion kept) -> complet 22 MW > Fook length, scales . MW - pool 2 Most deep pool actually slow deep nums of size course 0 size course Edited by:	22		2 - 0000	ingrand		
a (notistikal) -7 canght 2 MW > took length; scales MW - post 2 Most deep pool actually slow deep nons 0 20-30 cm	19516		11- Forlad	doon		154 0 20 110
2 Most deep pool altually slow deep nong of size rounds 20-30 cm	# Cookis					
Edited by	10101	X		11		IN No w pool
Edited by:	aling	the he	Of Accounts	noy you	ally imig of	site raines
					V	20 - 90 cm
	200				Ed	ted by
	小市					



Site 92; Moberly R. (Upstream view of site)



Site 92; Moberly R. (Downstream view of site with large pool)

Str	eám Name (gaz.)	dosi		R			(to	cal)						<u>R</u>			Acc	ess	1.6		Method
Wa	tershed Code	171	121	21 1		1	en de	1.	1	1.1.1	1 1	1	- Y	Reach	No.		Lengt	h (km			
Loc	ation a fried	: 40	2/97	Om	Jan	1.5	trea	m		Map#	25	51	2	Site No	10	3	Lthau	rv.lm	1128	S	2'
V	om Ford	3								the second second	0 3.	16.3	174	2 Flah Ce	jđ:	¥)	N	C	Field	9	ilst.
at	YMD 1207	3101	Ime	1 15	Agency	151	Crew	IG-	144	And and a state of the second s	hotos		0-1	Air Pho							det de la de la de la dela de la dela de la dela de
C	PARAMETER		VAL	UE	METH.	-	1000	1.4	-	ŝ	PECIF	IC D	ATA					0	BSTR	UCTI	ONS.
13	Ave.Chan.Width (m)	福津	27	9	4	21	6 3	3,4.	32	7,27	,0,	2	5.0	2				C	Hilm	Тура	Loc'r
2	Ave.Wet.Width (m) 3	and the second second	Sec. market	2	-	18.1	6,11	7.1	51	2,14-	1,17	. 1				_		1	1		1
1	Ave.Max.Biffle Depth	(cm)	2	1	MA	125	11	19	20	2.29	1		2		-	_				-	1
2	Ave.Max.Pool Depth	(cm)	7	1	MS.	41	.57	(-1	79	94 0	2		-			_		-		1	1
T.	Gradient %	3	10	1	TTC	C	1.200	ED M	ATE	RIAL	117		C		BANK	s		1		10-11	-
1	A STRATE AND A STR	Hun 6	DQ	her	GE	1000		age of the second second	1000	1<2mm	10	0		Heightim	95741	Insta	ible 30		-		-
-	a promotion of the second se				GE		1024029-0420	small U			10	10		Texture	F	-	D R	1		1	1
- 22	All and the state of the state	5 6	Contraction in the	and the other designed in the other	GE		Gravela	iarge ()	-			10	-		linemen	-	EN CO	) F(	, íôc	) úc	N/A
	Debru Stable %	1000 100	20		GE	28	al an or	193270120	1931.55	4-128mml	20	30	-	Valley: Ch	10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		0-2	2-5	5-10	10+	N/A
124	COVER: Total %		21		GE	[2]	U IV.I.S			28-256mm	- 648504	74		Mar Ast	211-22-22-21		Dry	3	M	H	Floor
- 70 - 72	Camp. Dp Ppdi L.O.D.	Personal		Over Veg	and a second	20	先進保護	bouider		COLUMN.	12	2		Flood Sig	and a state of the		1.42	Braid	0.01		N)
- Hereit	sum 100% 30 20	10	T	11-	25	1.25	es en la companya	A CONTRACTOR	1.00.15		15	2		Bars (%)	2000	~	pH	Cran	SBC-C	(mqq	
0.15	the second se		C	42	2.5		and an and the second second	and the second s	ic is	Compactic	n L (N	À H	-	Water Temp	15			a.	-	25*C1	-
39	Grown Glosure %	5	1.2	Aspect	114	130	D <sub>90</sub> (cm	135		Compactic	1 L C	9 11		water teach	1.1	_		96	Lound.	49.01	<u> </u>
金ん			1		HARGE	_	Cali	cific Da		_					B	=AC	(Fish)	1BOL			
3	Parameter	Value	N	Aethod 7	101	TILI		6 11	1	166		-									
- 12	Wetted Width (m)	15.4	-	1	12.6	1414	10.	210		- 14		_							_		
3	Mean Depth(m)	0.25	10 June 10	M4 CITMT	1251	.14	130	12		.29		-									
返	Mean Velocity (m/s)	0.91	1.1	21111	75/10	44	110, 1	2.5/1	11	5/10,19	5/13	1	Hannahan				ł				10.07 K (10.04)
40.5	Discharge (m <sup>3</sup> /s)	2.63		P	12	<u></u>			_		_ 2		Widt	n.Valley:Chi	innel,Slo	pel			DEC 87		SS1 B

c	Speciu.	No,	NISHI SUM Size Rangelmm	and the local state of the local	Use	Motton / Ari	L STREAM/VALLEY CROSS-SECTION
	CCG	16	41-87	J, A	R	EL	PLANIMETRIC VIEW
	Channel	01	i Basari	TIC 100-00-00	4.925	o constant	COMMENTS
	Phot		H-H.	LOOR		Concerns	towards down stream and of site
T	CLAC	ho	-10	at 10	20	- up	strephin from cite in ford.
2	a/3	a	these a	react	nia	0.1	ast deep roves (Chot a many pools present)
				_			
-							
							Edited by
							Date Y M D



Site 93; Moberly R. (Upstream view of site with ford)

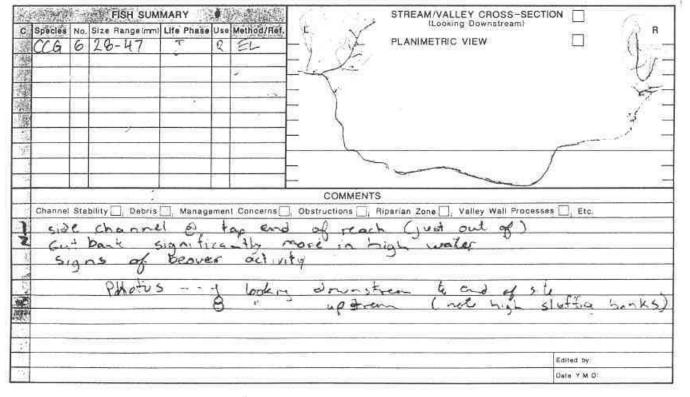


Site 93; Moberly R. (Downstream view of site)

ream Name (gaz.)	m 121	vily		(local)		Acces	s Vz	4	Metho
aterahed Gode 123	0124	Y AL	111	i li i li i li i fir	Reson No.	Length	m	12 I	
Kingon south	+ Fr	v~ ;	lea	ing sound Meper 93.	-0/9 SIL NOT 45	Lth sorv	A TABLE AND A TABLE AND A		31
COMPANY AND A DOMESTIC OF A	2 . 197		Agency	and the second se	3-61737 2860000 ()	N			141
PARAMETER	IC TI MAD	VALUE	METH		IC DATA	18	DESID.	UCT	ONS:
Ave Chan Wildth Int	and the second se	39.1	+	LAD . C	88 34.1	1	Him	All a second sec	and the second
Averweitwichthemis	Address of the owner own	14.2	+	1	5.7.14.4	1.54	調え入	1 337	1
Ave.Max.Riffle Dept	h lemî	23	MS	18.37-16.23.25	, , ,	2.2	2	T	
Ave.Max.Pool Depth	(cm)	86	MS	29, 17, 40, 104, R7 10		12	34		T
Gradient & Part	新家	.5	CL	C BED MATERIAL 9	A NEW MARKED AND A STREET AND A				
10001000110	)颜打。	Other	GE	FINSE Clay, sill, sand I(2mm)	Heightim)	ole 72		1	
The second se	and the second second	40 240	GE	Graves	Texture F	LRS	<u>a</u>		
CALINE MUSE	01-5 -05-		90	large (16-64mm)	Confinement	HEARD CHARGE	FC OC		N/
Stable %		20	GE	sm.cobbie (64-128mm)	Valley: Channel Ratio	0-2 2-	-	-	) N/
COVER: Total %		40	GU	227 (12 roets Ige sobble (128-256mm)		Dry (L	2 M	н	Flor
Sum Dp Pool L.O.D.	-	Veg Over Veg		boulder 1>256mm1	Flood Signs Htlm)	1.6.1	aided	_	0
100% 50 35		T T C Aspect	15	Bedrook (IR)	Bars (%) 30	рН		2ppm)	
Crown Closufe %	0	REZE!	E	Real- 30- 1 / First	115	95aaa.30 y 11102	1000	1.(25*0)	1
Parameter	Value	Method	HARGE	Specific Data	REAC	H SYMB( (Fish)	н_		
Wetted Width (m)	13.2	T	12	6, 12.7, 13.1, 13. 5, 13;	7-				
Mean Depth (m)	151-	ns	22	37 24 24. 45	1	-			
Mean Velocity (m/s)	0.43	Flion	11	26 25 2024					
Discharge (m <sup>3</sup> /s)	3,2	F		10 1 P 1 L 0 2	(Width,Vailey:Channel,Slope)	ł		(Bed N	Antoria

)	) )	DFO/MOEP	8	)
	.n	CTDEAM CUDVEY FORM		

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Site 95; Moberly R. (Upstream view of site; note sluffing banks)



Site 95; Moberly R. (Downstream view of site)

## APPENDIX B

West Moberly River Fish Data

SITE # 1	Date:	
		Fork length
No.	Species	(mm)
1	DV	254
2	CAS	254
3	CAS	254
4	CAS	254
5	CAS	254
6	CAS	254
7	CCG	44
8	CCG	80
9	CAS	81
10	CCG	89
11	DV	114
12	CAS	86
13	CAS	77
14	CCG	66
15	CAS	42
16	CAS	54
17	CAS	49
18	CAS	74
19	CCG	44
20	CAS	79
21	CAS	81
22	CAS	69
23	CAS	43
24	CAS	51
25	CAS	41
26	CAS	72
27	CAS	45
28	CAS	50
29	CAS	36
30	CAS	41
31	CAS	44
32	CAS	53
33	CCG	41

SITE # 1	Date:	19-Jun-92
		Fork length
No.	Species	(mm)
34	CAS	50
35	CAS	51
36	CCG	32
37	CAS	44
38	CAS	39
39	CAS	56
40	CCG	50
41	CCG	41
42	CAS	64
43	CAS	44
44	CAS	54
45	CCG	45
46	CAS	41
47	CAS	44
48	CCG	51
49	CAS	43
50	CAS	38
51	CAS	42
52	CAS	52
53	CAS	31
54	CCG	45
55	CAS	44
56	CCG	36
57	CCG	34
58	CAS	37
59	CCG	36
60	CAS	39
61	CAS	41
62	CCG	36
63	CCG	37
64	CAS	37
65	CCG	31
66	CAS	41

SITE # 6	Date:	17-Jun-92
		Fork longth
		Fork length
No.	Species	(mm)
1	LNC	100
2	LNC	113
3	CCG	59
4	CCG	65
5	CCG	36
6	CCG	70
7	CCG	52
8	CCG	52
9	CCG	46
10	CCG	49
11	CCG	49
12	CCG	51
13	CCG	54
14	CCG	63
15	CCG	57
16	CCG	64
17	CCG	63

SITE # 6A	Date:	18-Jun-92
		Fork length
No.	Species	(mm)
1	RB	89
2	CCG	104
3	RB	103
4	RB	211
5	RB	92
6	CAS	74
7	RB	103
8	RB	92
9	CCG	108
10	CCG	104
11	CCG	110
12	CCG	74
13	CAS	101
14	CCG	82
15	CCG	54
16	CCG	51
17	CCG	56
18	CCG	51

SITE # 9	Date:	17-Jun-92
		Fork length
No.	Species	(mm)
1	LNC	87
2	MW	138
3	MW	278
4	MW	169
5	CCG	88
6	MW	161
7	MW	109
8	RB	120

SITE # 38	Date:	3-Jun-92
		Fork length
No.	Species	(mm)
1	CCG	110
2	CCG	90
3	CCG	80
4	CCG	85
5	CCG	100
6	CCG	80
7	CCG	70
8	CCG	78
9	CCG	60
10	CCG	75
11	CCG	70
12	CCG	80
13	CCG	60
14	CCG	65
15	CCG	71
16	CCG	70
17	CCG	65
18	CCG	56
19	CCG	50

SITE # 49	Date:	4-Aug-92
		Fork length
No.	Species	(mm)
1	DV	139
2	CCG	102
3	DV	133
4	DV	141
5	DV	140
6	DV	145
7	DV	148
8	CCG	92
9	CCG	104
10	CCG	81
11	CCG	94
12	CCG	96
13	CCG	72
14	CCG	69
15	CCG	64

SITE # 58	Date:	5-Aug-92
		Fork length
No.	Species	(mm)
1	DV	128
2	CCG	83
3	CCG	107
4	DV	168
5	DV	143
6	CCG'	81
7	CCG	71
8	CCG	57
9	CCG	63
10	CCG	76
11	CCG	64
12	CCG	76
13	CCG	63
14	CCG	70

SITE #89	Date:	5-Aug-92
		Fork length
No.	Species	(mm)
1	DV	143
2	CCG	109
3	CCG	105
4	CCG	94
5	CCG	86
6	CCG	72
7	CCG	81
8	CCG	77
9	CCG	79
10	CCG	76
11	CCG	74
12	CCG	69
13	CCG	66

SITE #89	Date:	5-Aug-92
		Fork length
No.	Species	(mm)
14	CCG	76
15	CCG	53
16	CCG	67
17	CCG	58
18	CCG	42
19	CCG	55
20	CCG	46
21	CCG	44
22	CCG	49
23	CCG	46
24	CCG	34
25	CCG	32
26	CCG	28

SITE # 92	Date: 30-Jul-92	
		Fork length
No.	Species	(mm)
1	CCG	82
2	CCG	72
3	CCG	66
4	CCG	56
5	CCG	53
6	CCG	56
7	CCG	32
8	MW	242
9	MW	240

SITE # 93	Date:	30-Jul-92
		Early Jan eth
		Fork length
No.	Species	(mm)
1	CCG	74
2	CCG	87
3	CCG	67
4	CCG	84
5	CCG	69
6	CCG'	68
7	CCG	64
8	CCG	76
9	CCG	64
10	CCG	67
11	CCG	56
12	CCG	49
13	CCG	53
14	CCG	54
15	CCG	41
16	CCG	46

SITE # 95	Date:	29-Jul-92
		Fork length
No.	Species	(mm)
1	CCG	46
2	CCG	47
3	CCG	39
4	CCG	29
5	CCG	30
6	CCG	28

Species codes:

- CAS prickly sculpin CCG slimy sculpin
- DV bull trout
- LKC lake chubb
- LNC longnose dace
- LSU longnose sucker
- MW mountain whitefish
- RB rainbow trout

# APPENDIX C

Location of Survey Sites for the West Moberly River Stream Surveys Note: Appendix 'C' consists of four 1:50,000 NTS maps. These are only available in the original copy of the report which is located in the BC Environment library in Fort St. John.