DOWNTON RESERVOIR FISH PASSAGE CULVERT INSPECTION

BCRP PROJECT # 05.BR.01

Prepared for

BRIDGE COASTAL RESTORATION PROGRAM

Prepared by

SIGMA ENGINEERING LTD.

Prepared with financial support of

BC HYDRO BRIDGE COASTAL FISH AND WILDLIFE RESTORATION PROGRAM

Executive Summary

Sigma Engineering Ltd. assessed fish access at culverted stream crossings upstream and downstream of the Downton Reservoir/LaJoie Dam in September 2005 under a Grant Application for Seed Funding provided by the BC Hydro Fish and Wildlife Bridge Coastal Restoration Program (BCRP). The goal of this project was to conserve and improve habitat for resident fish stocks throughout the Bridge River Reservoirs and their tributary systems by assessing fish access at culverted stream crossings in the Downton Reservoir watershed and downstream of the LaJoie Dam.

A total of five culverts were assessed following the full provincial Fish Passage Culvert Inspection procedure: this procedure was designed to identify and prioritize fish passage issues, with the aim of re-establishing fish access at any crossings that were identified as barriers. All five sites were assessed as being full or partial barriers but no prescriptions or recommendations for restoration work is recommended due to the topography of the watershed: the high gradient slopes and step-pool morphology of the creeks do not provide suitable spawning or rearing habitat above the culverts.

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INTRODUCTION

Sigma Engineering Ltd. assessed fish access at culverted stream crossings upstream and downstream of the Downton Reservoir/LaJoie Dam in September 2005 under a Grant Application for Seed Funding provided by the BC Hydro Fish and Wildlife Bridge Coastal Restoration Program (BCRP). The Strategic Plan for the BCRP provides the technical framework to guide activities and priorities under the program[i]. Volume 1 of the Strategic Plan outlines the overall restoration strategy and summarizes 'footprint' impacts of BC Hydro projects in the Bridge-Coastal generation area. Chapter 10 of Volume 2 of the Strategic Plan contains details of fish and wildlife impacts and restoration objectives for the Bridge River watershed[ii]. These documents identified construction of access roads and installation of stream crossing structures as probable obstructions to fish. Rainbow trout, bull trout, Dolly Varden char, kokanee and mountain whitefish are present within the Downton Reservoir: no anadromous species were reported historically above the 50 feet vertical La Joie Falls, one of two falls flooded by the project[ii].

GOALS AND OBJECTIVES

The goal of this project was to conserve and improve habitat for resident fish stocks throughout the Bridge River Reservoirs and their tributary systems (Fish Restoration Objective 2 of the BCRP Strategic Plan for the Bridge River watershed) by assessing fish access at culvert bearing road crossings in the Downton Reservoir watershed and downstream of the LaJoie Dam. Ensuring that tributary streams, lakes, off-channel habitats and back channels remain connected is necessary to maintain healthy populations of rearing juveniles and spawning adults[iii].

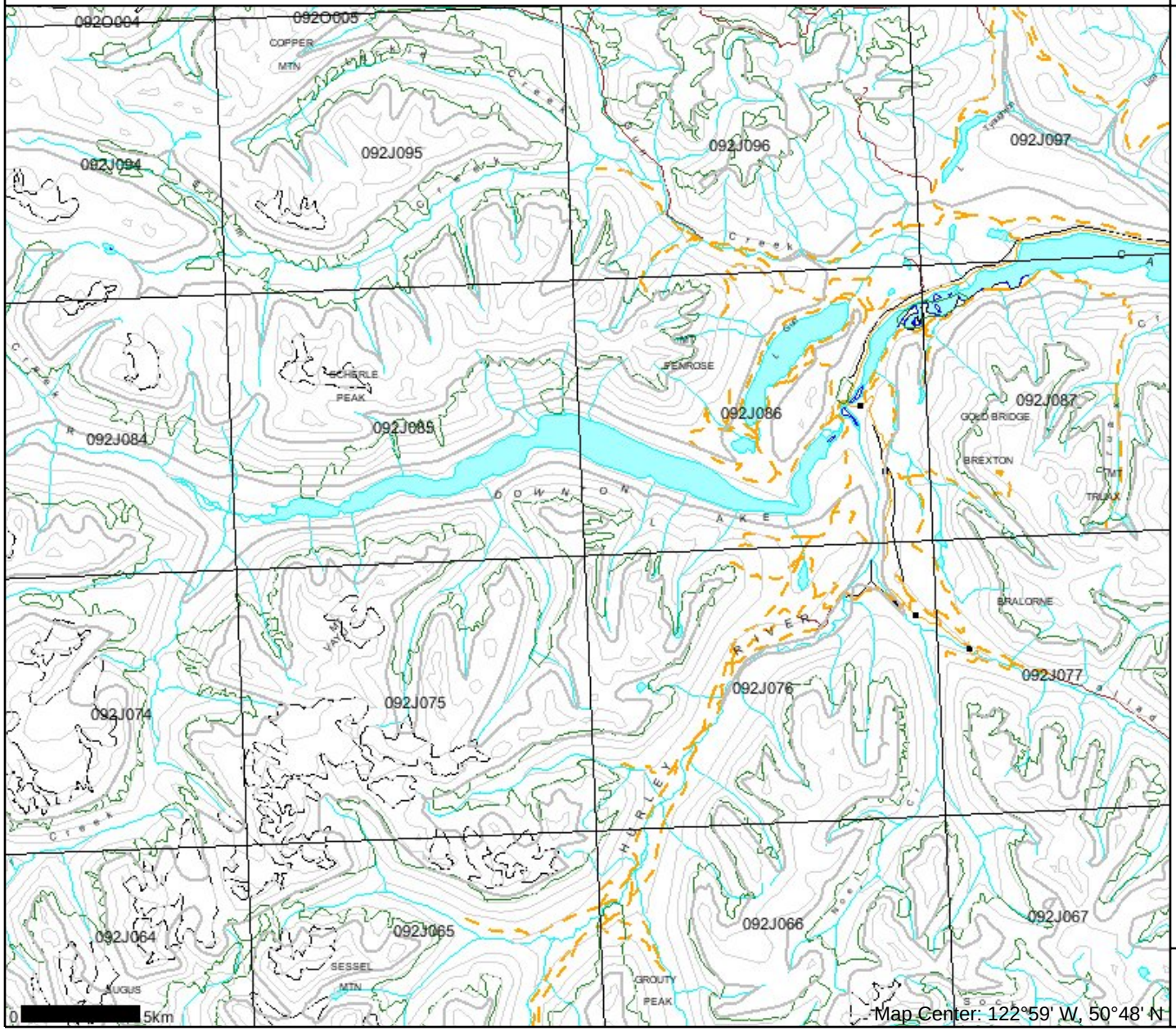
STUDY AREA

The study focused on roads in the watershed of the LaJoie Dam and Downton Reservoir, part of the Bridge River Hydroelectric Project, located approximately 200 km northeast of Vancouver, near Gold Bridge, BC (Figure 1).

METHODS

Culvert assessment was done following the Fish Passage Culvert Inspection Procedures (FPCI)[iii]. The FPCI Procedure was developed to evaluate access to existing habitats upstream of culverts, and consists of two office-based and two field-based phases. Even though this assessment was developed for use in the Watershed Restoration Program, it is easily applied to other non-forestry locations and programs, and was used in this assessment with some modifications. The FPCI was designed to identify and prioritize fish passage issues: a prescription would need to be completed to re-establish fish access at any crossings that are identified as barriers.

Figure 1 - Study Area



Legend

- Airphoto Centres (1999)
- Airphoto Operation Areas (1999)
- Flight Lines (1999)
- BCGS 1:20 000 Grid
- Contours (1:250K)
- Contour - Index
- Contour - Intermediate
- Areaof Exclusion
- Areaof Indefinite Contours
- Annotation (1:250K)
- Landcover - Lines (1:250K)
- Wooded Area
- Landform - Points (1:250K)
- Rock
- Landform - Lines (1:250K)
- Ledge
- Cliff
- Esker
- Moraine
- Landmark - Points (1:250K)
- Mine - Abandoned
- Campground/Campsite
- Park
- Ski Area
- Park/Picnic Area
- Campground Campsite
- Town
- Village
- School
- Fire Lookout - Tower
- Ranger/Warden Station
- Customs Office
- Electric Facility/Transformer Station
- Oil/Gas Facilities
- Cabin/Hut/Shack
- Terminal/Station - Railroad
- Building
- Tower/Mast
- Tower/Mast - Microwave
- Tower - Clearance(symbol)
- Monument (Historical)
- Beacon
- Navigation Aid - Light(symbol)
- Tank
- Landmark - Lines (1:250K)
- Mine (Underground)
- Pit
- Quarry
- Sewage Leaching Field
- Tailing Pile/Pond/Dump
- Built-up Area

Scale: 1:250,000

DO NOT USE FOR NAVIGATION

The procedure followed the four steps outlined in the FPCI:

1. Step 1 involved identifying all potential culverted stream crossings by selecting all crossings on 1st to 3rd order watersheds from 1:20,000 scale maps (92J.085 & 086). Streams mapped as ephemeral or temporary were not included.

2. Step 2 involved identifying all crossings on fish bearing or potential fish bearing streams. Since no formal FPC fish stream classification has been conducted in the watershed, all streams without known barriers or gradients >25% were included in this phase.

3. Step 3 involved the field identification of stream crossings with existing culverts: the crossing would not require an assessment, for example, if a culvert did not exist or had been deactivated.

4. Step 4 assessed the fish habitat above and below the crossing to determine if it was viable. Assessments were not be conducted if there was no defined stream channel associated with the crossing; if the crossing was only a low draw or swale with no defined stream bank and was vegetated throughout; or if the channel was dry at the time of the site visit, or had no viable fish habitat. A culvert inspection form and series of photographs was completed for each culvert crossing fully assessed.

No fish sampling was conducted, as the water levels were too low at the time of the survey to allow minnow trapping. Water velocities were not measured due to the channel configuration (generally cascade or step-pool) and low water levels.

RESULTS

The potential culverted stream crossings within the Downton Reservoir watershed along Lillooet Road (for 10 km from Gold Bridge), Gun Lake Road Forest Service Road (FSR), and Bridge River FSR to the end of the reservoir are listed in Table 1. All creeks having an average gradient or gradient between the reservoir or river and road crossing of <25% were identified in Step 2 as being potentially fish-bearing and required further assessment.

The field phase (Steps 3 & 4) of the program was conducted between September 26th and September 28th, 2005. The full assessment was conducted on only five crossings within the project area: most of the crossings identified in Steps 1 & 2 either had no defined stream channel associated with the crossing or had no viable fish habitat. In many cases, crossings or channels identified on the 1:20,000 maps were often not located in the field, either due to the wide cut of the road bed or other disturbance within the watershed (i.e. logging). An example of this is shown in the following photographs, taken along the north side of the reservoir from Gun Creek Forest Service Road: several first order tributaries are mapped as flowing into the reservoir along this stretch of road, but the road cut has erased all evidence of any channels or seeps: no culverts were located.

Table 1 - Potential Culverted Crossings within the Downton Reservoir watershed

Site #	Road Name	UTM Location			Average Stream Gradient			
		Zone	Easting	Northing	Elevation		Length (m)	Gradient (%)
					u/s	d/s		
1	Bridge River FSR	10	509309	5628798	1040	745	767	38%
2	Bridge River FSR	10	508216	56283698	860	745	131	88%
3	Bridge River FSR	10	504243	5629905	980	745	757	31%
4	Bridge River FSR	10	502673	5630432	900	745	579	27%
5	Bridge River FSR	10	500883	5631083	860	745	208	55%
6	Bridge River FSR	10	500064	5631406	880	745	204	66%
7	Bridge River FSR	10	499857	5631555	900	745	486	32%
8	Bridge River FSR	10	498100	5631650	900	745	693	22%
9	Bridge River FSR	10	496194	5630475	860	745	459	25%
10	Bridge River FSR	10	494320	5630269	900	745	484	32%
11	Bridge River FSR	10	492874	5630435	1000	745	815	31%
12	Bridge River FSR	10	491637	5629968	820	745	229	33%
13	Bridge River FSR	10	490637	5629629	920	745	513	34%
1	Carpenter Lake Road	10	511159	5634256	780	655	282	44%
2	Carpenter Lake Road	10	511428	5634903	1060	655	881	46%
3	Carpenter Lake Road	10	511794	5635652	1000	655	1207	29%
4	Carpenter Lake Road	10	511850	5635871	1020	655	1454	25%
5	Carpenter Lake Road	10	511962	5636079	860	655	419	49%
6	Carpenter Lake Road	10	512292	5636370	900	655	1215	20%
7	Carpenter Lake Road	10	512409	5636439	860	655	897	23%
8	Carpenter Lake Road	10	512846	5636921	900	655	2085	12%
9	Carpenter Lake Road	10	512987	5636981	860	655	642	32%
10	Carpenter Lake Road	10	513181	5637051	880	655	798	28%
11	Gun Lake Road	10	510616	5633302	1000	680	2017	16%
12	Gun Lake Road	10	510531	5633242	1260	680	1271	46%
13	Gun Lake Road	10	510376	5632882	1100	680	1108	38%
14	Gun Lake Road	10	510006	5632565	1120	700	1209	35%
15	Gun Lake Road	10	509719	5632399	1240	740	783	64%
16	Gun Lake Road	10	509675	5632330	1160	740	616	68%
17	Gun Lake Road	10	509590	5632181	1220	745	775	61%
18	Gun Lake Road	10	509507	5632043	1200	745	652	70%
19	Gun Lake Road	10	509378	5631852	1160	745	588	71%
20	Gun Lake Road	10	509080	5631549	1140	745	587	67%
21	Gun Lake Road	10	508956	5631430	1100	745	486	73%
22	Gun Lake Road	10	508906	5631361	1100	745	489	73%
23	Gun Lake Road	10	508761	5631159	1040	745	403	73%
24	Gun Lake Road	10	508672	5631028	1020	745	541	51%
25	Gun Lake Road	10	508454	5630641	940	745	454	43%
26	Gun Lake Road	10	508365	5630525	920	745	335	52%

Photo 014 View southwest along Gun Creek FSR.

Photo 015 View northeast along Gun Creek FSR: LaJoie Dam is in the background.

Sites Assessed

The locations of the assessed sites are shown in Figure 2: photos are provided in Appendix III. The following paragraphs summarize the creek and culvert characteristics recorded on the Fish Passage Culvert Inspection Form, copies of which are provided in Appendix V.

Site 1 UTM 10.509300.5628795

Site 1 is located on an unnamed creek at 2.3 km along the Bridge River Forest Service Road. The culvert is a round, 1400 mm diameter corrugated steel pipe, 21 m long, with a gradient of 3%. Water depth in the inlet was 4 cm and wetted width was 30 cm: higher flows, indicated by rust stains at the culvert inlet, frequently reach a depth of 30 cm. The culvert outfall drop was 170 cm and no plunge pool was present. This would make it a full barrier to fish migration, since it is above the jumping abilities of adult trout. Restoration of fish passage at this site is not recommended, however, based on the stream characteristics above and below the culvert. The step-pool boulder habitat does not provide any spawning or rearing areas and the reach would be classified as non-fish bearing based on gradient (30% downstream and 28% upstream).

Site 2 UTM 10.508215.5628718

Site 2 is located on Gwyneth Creek at 3.46 km along the Bridge River Forest Service Road. The culvert is a round, 1200 mm diameter corrugated steel pipe, 14.7 m long with a gradient of 2%. Water depth in the culvert was 2 cm and wetted width was 30 cm: the high water mark was 30 cm, indicated by the rust stains in the culvert. The 40 cm outfall drop at the time of the survey is a partial barrier: at higher flows the culvert would be under water. The creek has cascade habitat downstream of the culvert (gradient 45%) and step-pool boulder habitat upstream (gradient 31%), with a 1.2 m falls located approximately 30 m upstream of the culvert. The average bankfull width is 4 m below the culvert and 3.5 m above the culvert. Water depth was 6 cm below the culvert (with sections dewatered) and 8.7 cm above: average bankfull depth (vertical height from waters edge to the bankfull depth) was estimated as 53 cm upstream and 51 cm downstream.

Site 3 UTM 10.493084.5630255

Site 3 is located on an unnamed creek 20.7 km along the Bridge River Forest Service Road. The culvert is a round, 1450 mm diameter corrugated steel pipe with a gradient of 4%. Water depth a the inlet was 3 cm and wetted width was 30 cm: the high water mark was 10 cm, indicated by the rust stains in the culvert. The culvert had an outfall drop of 36 cm and is a full barrier due to the lack of plunge pool at the outfall. No natural fish habitat exists downstream of the culvert: water from the outfall drops onto large, angular rip-rap and flows subsurface down a 45% slope until the natural channel resumes 20-30 m away. The channel remains natural upstream of the culvert but does not provide

any fish spawning or rearing habitat: the 55% gradient had an average wetted width of 74 cm and bankfull width of 120 cm during normal flows. Average depth at the time of the survey was 5.2 cm and bankfull depth was estimated as 25 cm.

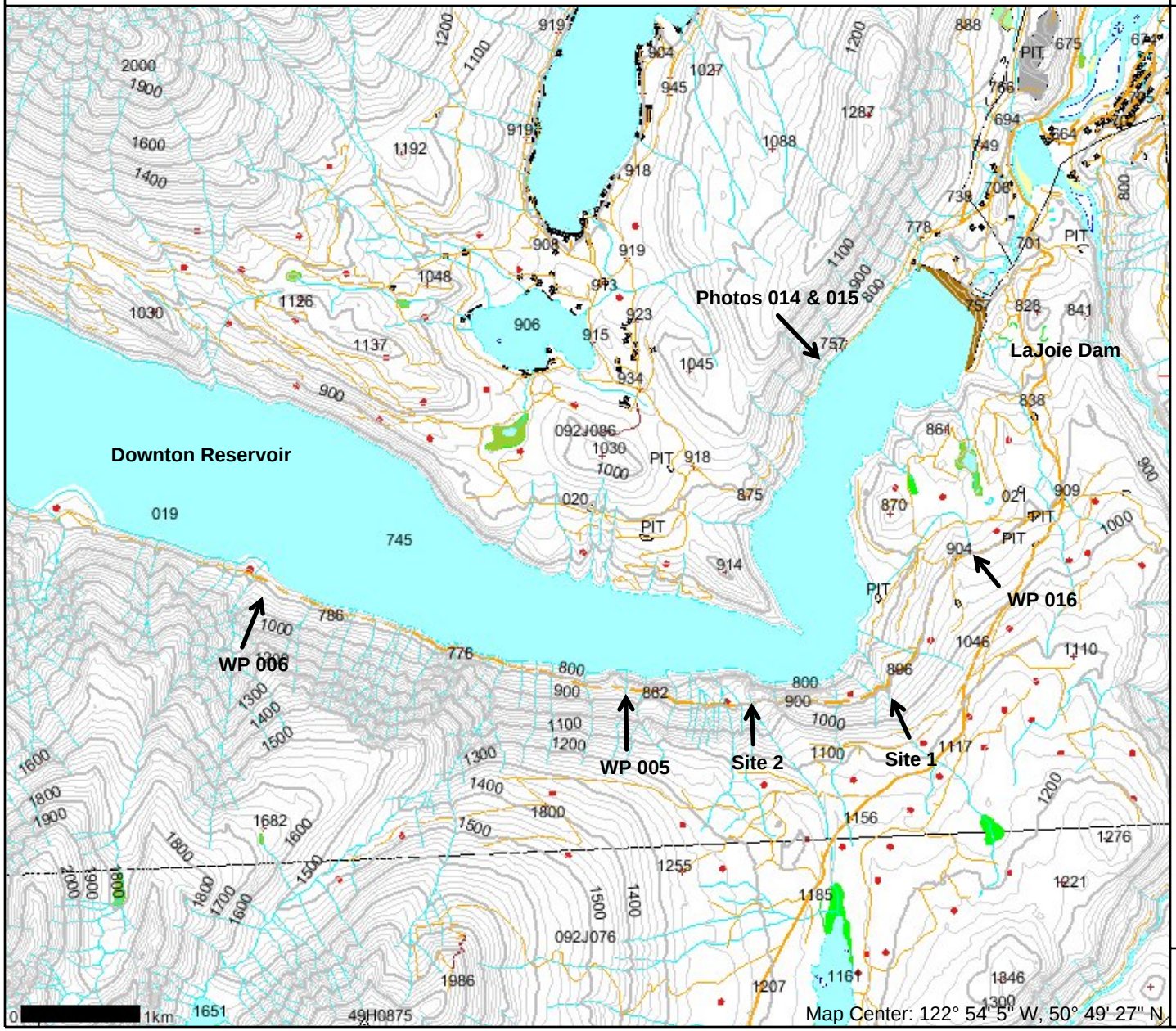
Site 4 UTM 10.491634.5629975

Site 4 is on an unnamed tributary with a watershed code of 100-241900-75800 at 22.6 km along the Bridge River FSR. The culvert is a round, 900 mm diameter corrugated steel pipe with a gradient of 1%. Water depth in the culvert was 14 cm and wetted width was 80 cm at the inlet: the high water mark was 40 cm, indicated by the rust stains in the culvert. The 42 cm outfall drops onto boulder and cobble substrate: the culvert is a barrier at current flows due to the lack of a plunge pool, but would be submerged at high flows. However, it would likely be a velocity barrier at higher flows, since velocity was measured at 1 m/s at the time of the survey during low flows. A short section (~15 m) of creek upstream of the culvert provides good rearing habitat, being low gradient riffle habitat with abundant riparian vegetation and instream cobbles and boulders for cover, but the channel upstream of this becomes a high gradient (32%) cascade. Downstream of the culvert the channel is boulder step-pool with a 45% gradient slope; 23-30 m downstream of this the channel becomes braided and flows overland in sections.

Site 5 UTM 10.491634.5629975

Site 5 is on an unnamed tributary with a watershed code of 100-241900-76400 at 22.6 km along the Bridge River FSR. The culvert is a round, 1200 mm diameter corrugated steel pipe with a gradient of 1.5%. Water depth in the inlet was 18 cm and wetted width was 75 cm at the inlet: the high water mark was 44 cm, indicated by the rust stains in the culvert. The outfall drop is 35 cm and falls onto boulder and riprap with no plunge pool. Abundant LWD and SWD parallel to the flow in the cascade upstream of the culvert indicate high flows have occurred historically: the inlet of the culvert has sustained some damage, possibly from the debris in high flow events. The average wetted width below the culvert is 4 m and the average bankfull width was estimated as 4.25 m, with a bankfull depth of 30 cm. This culvert is not a barrier to fish passage.

Figure 2a Downton Reservoir Culvert Assessment



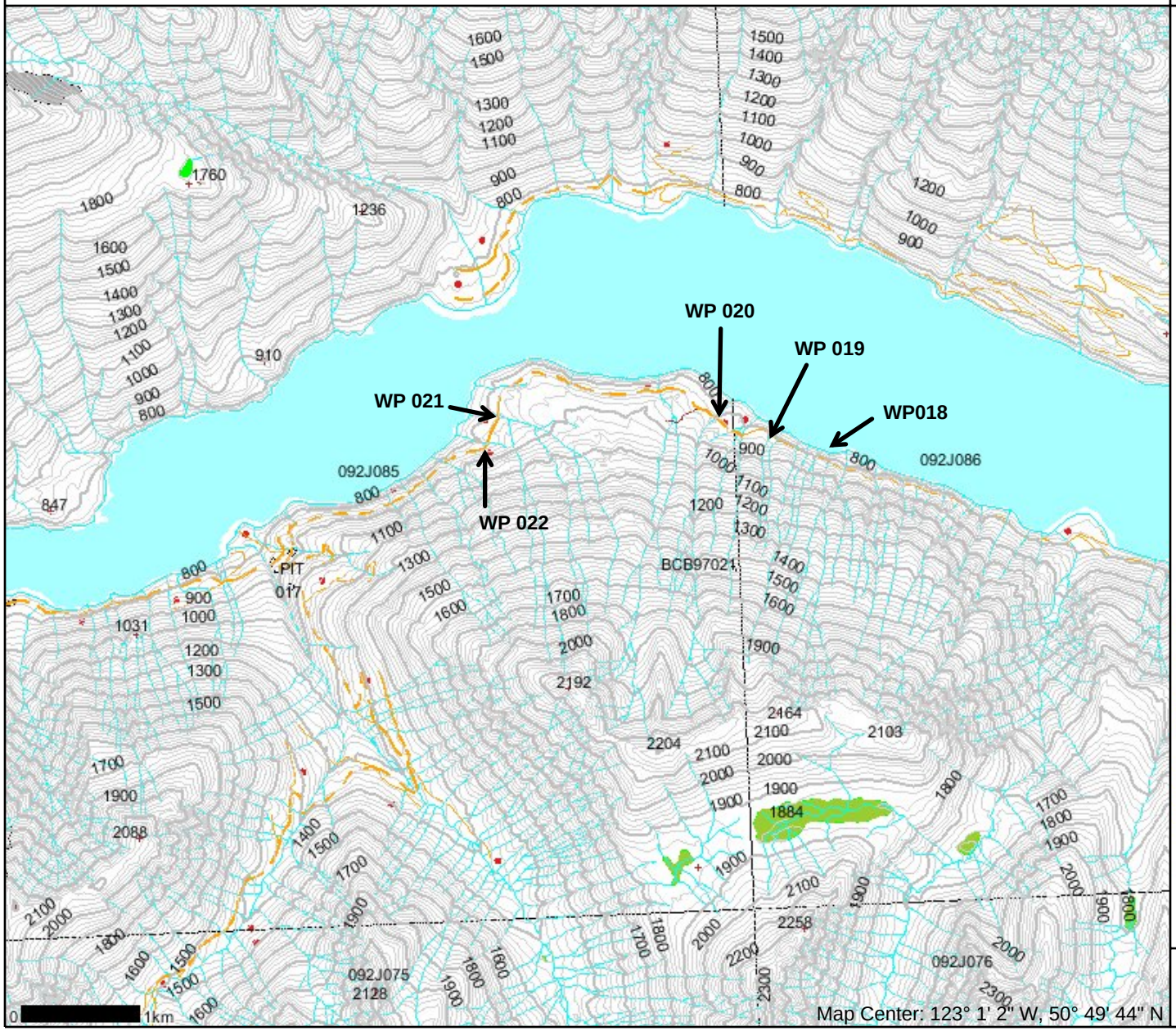
Legend

- EBM - ElevationAnno (TRIM)
- EBM - CulturalAnno (TRIM)
- EBM - LandcoverAnno (TRIM)
- EBM - MiscAnno (TRIM)
- EBM - SurfaceAnno (TRIM)
- EBM - TransportationAnno (TRIM)
- EBM - WaterAnno (TRIM)
- EBM - Contours (TRIM)
- Contour - Index
- Contour - Index.Indefinite
- Contour - Index.Depression
- Contour - Index.Depression Indefinite
- Contour - Intermediate
- Contour - Intermediate.Indefinite
- Contour - Intermediate.Depression
- Contour - Intermediate.Depression Indefinite
- Areaof Exclusion
- Areaof Indefinite Contours
- EBM - Landform (TRIM)
- Cliff
- EBM - Landmark (TRIM)
- Ski Lift
- Conveyor
- Dock - Ferry
- Pier
- Fence
- Line (Transmission) - Electrical - Primary
- Pipeline
- EBM - Landmark-Misc (TRIM)
- Cut Line
- EBM - Transportation (TRIM)
- Ferry Route
- Road (Gravel Undivided) - 1 Lane
- Road (Gravel Undivided) - 2 Lanes
- Road (Gravel Undivided) - U/C - 1 Lane
- Road (Gravel Undivided) - U/C - 2 Lanes
- Road (Paved Divided) - Not Elevated - 1 Lane Each Way
- Road (Paved Divided) - Not Elevated - 2 Lanes Each Way
- Road (Paved Divided) - U/C - Not Elevated - 2 Lanes Each Way
- Road (Paved Undivided) - Not Elevated - 1 Lane
- Road (Paved Undivided) - Not Elevated - 2 Lanes
- Road (Paved Undivided) - Not Elevated - 4 Lanes
- Road (Paved Undivided) - U/C - Not Elevated - 4 Lanes
- Road (Unimproved)
- Cut (Roadway)
- Embankment/Fill (Roadway)
- Trail
- Bridge - Foot
- Bridge - Trestle
- Tunnel
- Bridge

Scale: 1:50,000

DO NOT USE FOR NAVIGATION

Figure 2b Downton Reservoir Culvert Assessment



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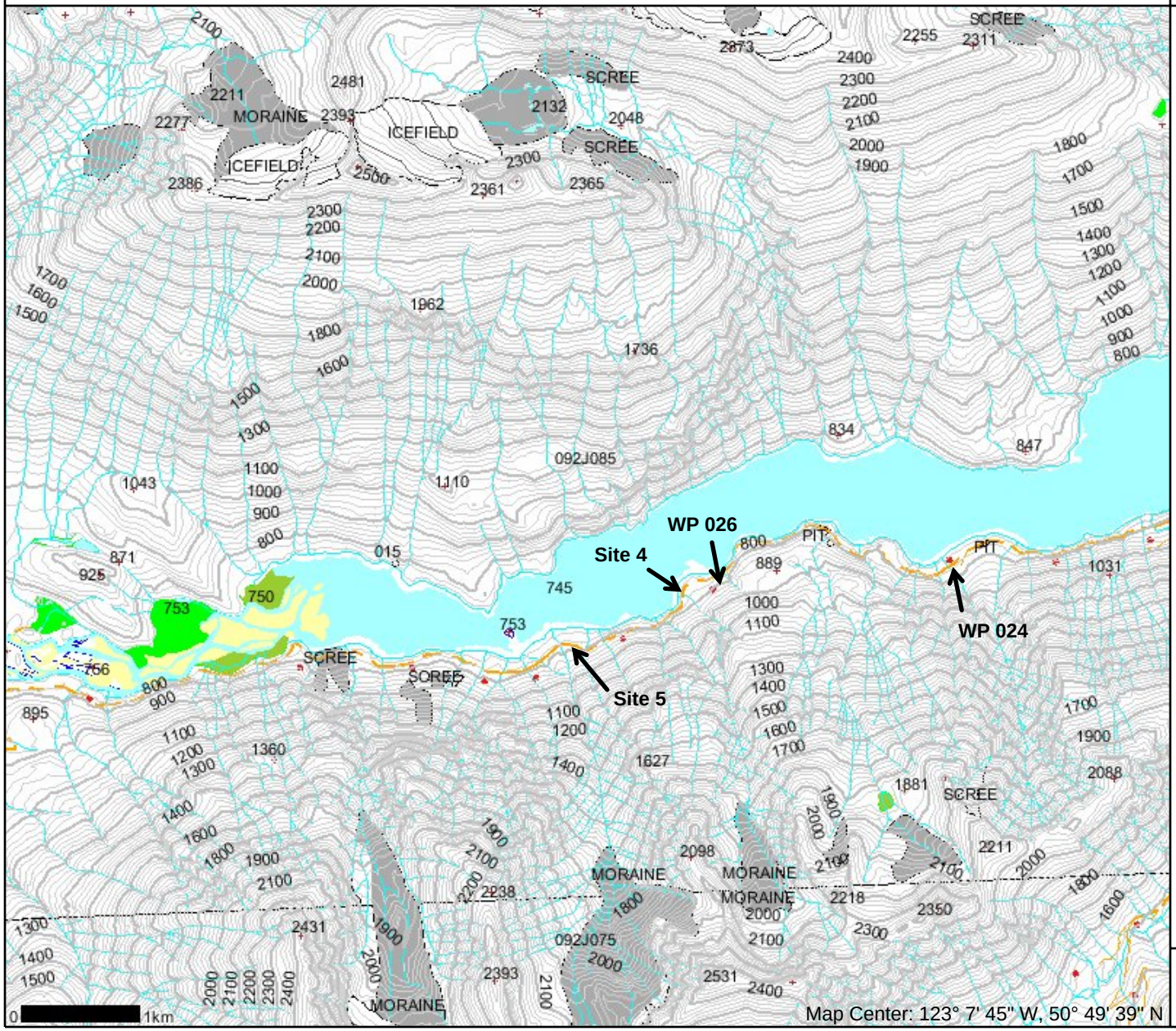
- Bridge

Scale: 1:50,000

DO NOT USE FOR NAVIGATION

Figure 2c Downton Reservoir Culvert Assessment



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Embankment/Fill (Roadway)
Trail
Bridge - Foot
Bridge - Trestle
Tunnel
Bridge

Scale: 1:50,000

DO NOT USE FOR NAVIGATION

Sites Not Assessed

Assessments were not conducted for one or more reasons:

- if there was no defined stream channel associated with the crossing,
- if the crossing was only a low draw or swale with no defined stream bank
- if the channel was dry at the time of the site visit
- if the channel had no viable fish habitat.

Location was noted and photographs were taken of crossings along the Bridge River FSR, however, no creeks or culverts were found as indicated on the 1:20,000 topographical maps along the Gun Lake FSR or along the Lillooet FSR, due to disturbance from the wide road cut. Examples of the streams not assessed are given in Table 2: photos are located in Appendix IV.

Table 2 Sites Not Assessed

Site	Location/UTM Coordinate	Reason not assessed
WP 005	10.506716E.5628995N	No fish habitat upstream. No stream is mapped on the 1:20,000 topo map: drains upslope clearcut
WP 016	10.510201E.5629889N	No evidence of alluvial creek bed where indicated on map. Channel possibly diverted by series of logging roads. Low gradient first order creek in lower reaches, 18% gradient in upper reaches accessible by Dolly Varden and Bull trout
WP 018	10.500575E.5631242N	Bedrock falls upstream of culvert. No fish habitat downstream of culvert.
WP 018 - a	10.500575E.5631242N	Bedrock falls upstream of culvert. No fish habitat downstream of culvert.
WP 019	10.500286E.5631393N	No fish habitat upstream of culvert
WP 020	10.500104E.5631422N	No fish habitat upstream of culvert, 20% gradient below culvert accessible by char. Runs through clearcut – no leave strip retained.
WP 022	10.497656E.5631300N	High gradient with bedrock seep upstream of culvert.

DISCUSSION

A total of five culverts were assessed following the full provincial Fish Passage Culvert Inspection procedure: this procedure was designed to identify and prioritize fish passage issues, with the aim of re-establishing fish access at any crossings that were identified as barriers. The majority of sites identified in Phases 1 and 2 of the project were not located in the field. The wide road grade had removed any evidence of alluvial channels along the Gun Lake Forest Service Road and along the Lillooet Road downstream of LaJoie Dam. Along the Bridge River FSR, many of the tributaries mapped on the 1:20,000 TRIM maps were not located, possibly due to stream diversions from historical and on-going logging and road construction in the upper watershed.

RECOMMENDATIONS

Four of the five sites were assessed as being full or partial barriers but no prescriptions or recommendations for restoration work is recommended due to the topography of the watershed: the high gradient slopes and step-pool morphology of the creeks do not provide suitable spawning or rearing habitat above the culverts.

ACKNOWLEDGEMENTS

This project was completed with the financial support of BC Hydro Bridge Coastal Fish and Wildlife Restoration Program.

REFERENCES

[i] Anon. 2000. Bridge-Coastal Fish and Wildlife Restoration Program STRATEGIC PLAN Volume 1: Strategy and Overview.

[ii] Anon. 2000. Bridge-Coastal Fish and Wildlife Restoration Program STRATEGIC PLAN Volume 2: Watershed Plan Chapter 10 Bridge River Watershed.

[iii] M.A. Parker. 2000. Fish Passage: Culvert Inspection Procedures. Watershed Restoration Technical Circular No. 11. Ministry of Environment, Lands and Parks.

APPENDIX I

Project # 05.Br.01

Financial Statement Form

	BUDGET		ACTUAL	
	BCRP	**Other**	**BCRP**	**Other**
INCOME				
Total Income by Source	4,977.00	0.00	4,977.00	
Grand Total Income (BCRP + other)		4,977.00		4,977.00
EXPENSES				
Project Personnel				
Wages	3,996.00		4,267.00	
Consultant Fees				
(List others as required)				
Materials & Equipment				
Equipment Rental	20.00			
Materials Purchased	31.00		26.25	
Travel Expenses	830.00		563.21	
Permits				
(List others as required)				
Administration				
Office Supplies	50.00			
Photocopies & printing	50.00		8.59	
Postage			8.65	
(List others as required)				
communications			0.19	
Total Expenses	0.00	0.00	4,835.91	-182.87
Grand Total Expenses (BCRP + other)		4,977.00		4,977.00
BALANCE (Grand Total Income – Grand Total Expenses)	*The budget balance should equal $0*	0.00	*The actual balance might not equal $0**	0.00

* Any unspent BCRP financial contribution to be returned to: BC Hydro, BCRP
6911 Southpoint Drive (E14)
Burnaby, B.C. V3N 4X8
ATTENTION: JANICE DOANE

SIGMA ENGINEERING LTD.
1444 Alberni Street, 4th Floor
Vancouver, B.C., V6G 2Z4
GST# R104852421

STATEMENT

December 15, 2005

Here is our Statement from: **August 2005 - December 2005**

JOB # E6031 A

PROJECT # 05.BR.01

BC HYDRO
Bridge Coastal Restoration Program
6911 Southpoint Drive
Burnaby, BC
V3N 4X8

Re: Bridge Coastal - Downton Reservoir

PERSONNEL

			HOURS	RATE	AMOUNT
Aug-05					
	S. Eagen	Biologist	3.00	72.00	216.00
Sep-05					
	S. Eagen	Biologist	31.50	72.00	2,268.00
Nov-05					
	S. Eagen	Biologist	9.00	72.00	648.00
Dec-05					
	G. S. McDonnell	Manager	1.00	127.00	127.00
	S. Eagen	Biologist	14.00	72.00	1,008.00
			58.50		**$4,267.00**

EXPENSES

Aug-05	Photocopies	7.35		
	Minister of Finance (Permit Application) - NO GST	25.00		
Sep-05	Travel Expenses - S. Eagen	501.30		
	Telus	0.17		
	DHL Courier	7.70		
	Photocopies	0.30		
		$541.82	x 1.05	**568.91**

TOTAL PERSONNEL AND OTHER EXPENSES	**$4,835.91**
BILLING ADJUSTMENT	**($182.87)**
AMOUNT AFTER ADJUSTEMENT	**$4,653.04**
GOODS & SERVICES TAX @ 7%	**323.96**
TOTAL BILLING	**$4,977.00**
LESS PREPAYMENT RECEIVED ON APRIL 26, 2005	(4,977.00)
	$0.00

SIGMA ENGINEERING LTD
1444 Alberni Street, Suite 400
Vancouver, BC V6G 2Z4
Telephone: (604) 688-8271

INVOICE NO: CR6031 A

GST# R104852421

Here is our invoice for: **August 2005**

Job: E6031 A
Project # 05.BR.01

BC Hydro
6911 Southpoint Drive
Burnaby, BC
V3N 4X8

Re: Bridge Coastal - Downton Reservoir

PERSONNEL		HOURS	RATE	AMOUNT
S. Eagen	Biologist	3.0	72.00	216.00
			TOTAL PERSONNEL	**$216.00**

EXPENSES

Photocopies	7.35			
Minister of Finance (Permit Application)	25.00			
	32.35	x	1.05	**$33.97**
			TOTAL PERSONNEL AND OTHER EXPENSES	**$249.97**
			GOODS AND SERVICES TAX @ 7%	**$15.75**
			TOTAL BILLING	**$265.72**
			ADVANCED PAYMENT BALANCE	**($4,977.00)**
			CREDIT BALANCE (PLEASE DO NOT PAY)	**($4,711.28)**

TERMS: NET 30 DAYS
INTEREST ON OVERDUE ACCOUNTS MAY BE CHARGED AT 1.5% PER MONTH
EQUIVALENT TO 19.56% PER ANNUM

PHOTOCOPIES
JULY 2005
($0.15/copy)

) 4	1000	70		
) 4	1000	13		
) 4	1000	42		
) 4	1000	61		
) 4	1000	9		
) 4	1000	14		
) 4	1000	1		
	1000 Total	**210**	31.50	
) 4	1005	70		
) 4	1005	265		
) 4	1005	23		
	1005 Total	**358**	53.70	
) 4	6031	49		
	6031 Total	**49**	7.35	
) 4	6075	2		
) 4	6075	1		
) 4	6075	12		
) 4	6075	5		
) 4	6075	36		
) 4	6075	1		
) 4	6075	2		
) 4	6075	2		
	6075 Total	**61**	9.15	
) 4	6099	24		
) 4	6099	295		
) 4	6099	11		
	6099 Total	**330**	49.50	
) 4	6107	5		
	6107 Total	**5**	0.75	
) 4	6133	5		
) 4	6133	1		
	6133 Total	**6**	0.90	
) 4	6142	583		
) 4	6142	12		
	6142 Total	**595**	89.25	
) 4	6152	19		
) 4	6152	35		
	6152 Total	**54**	8.10	
) 4	615299	105		
	615299 Total	**105**	15.75	
	SIGMA ENGINEERING LTD.			**$265.95**

Twenty-Five and

NOT-NEGOTIABLE

PER
PER

CHEQUE NO.

SIGMA ENGINEERING LTD.
CHEQUE REQUISITION

DATE: AUG 2 2005

AMOUNT: $ 25.00

JOB #: E6031

PAYEE: MINISTER OF FINANCE

ADDRESS: PERMIT + AUTHORIZATION SERVICE BUREAU
P.O. BOX 9372 STN PROV GOVT
VICTORIA, B.C. V8W 9M3

DESCRIPTION	G/L #	TOTAL
APPLICATION FOR SCIENTIFIC COLLECTION PERMIT	5290	$ 25.00
	Sub-Total	
	1605 GST	
	Chq Total	$25.00

SYNEX GROUP
AUG 1[illegible] 2005
PAID

Requested By: Stephanie Eagen Date: Aug 2, 2005

Approved By: A.S.M. Dismell Date: Aug 8/05

Date Chq Required:

SIGMA ENGINEERING LTD
1444 Alberni Street, Suite 400
Vancouver, BC V6G 2Z4
Telephone: (604) 688-8271

INVOICE NO: CR6031 A

GST# R104852421

Here is our invoice for: **September 2005**

Job: E6031 A
Project # 05.BR.01

BC Hydro
6911 Southpoint Drive
Burnaby, BC
V3N 4X8

Re: Bridge Coastal - Downton Reservoir

PERSONNEL		HOURS	RATE	AMOUNT
S. Eagen	Biologist	31.5	72.00	2,268.00
			TOTAL PERSONNEL	**$2,268.00**

EXPENSES

Travel Expenses - S. Eagen	501.30			
Telus	0.17			
DHL Courier	7.70			
Photocopies	0.30			
	509.47	x	1.05	**$534.94**

TOTAL PERSONNEL AND OTHER EXPENSES	**$2,802.94**
GOODS AND SERVICES TAX @ 7%	**$196.21**
TOTAL BILLING	**$2,999.15**
ADVANCED PAYMENT BALANCE	($4,711.28)
CREDIT BALANCE (PLEASE DO NOT PAY)	($1,712.13)

TERMS: NET 30 DAYS
INTEREST ON OVERDUE ACCOUNTS MAY BE CHARGED AT 1.5% PER MONTH
EQUIVALENT TO 19.56% PER ANNUM

Sigma Engineering Ltd.

Expense Account

Project # 05. Br. 01

Name: Stephanie Eagen
Period Covered: September 26-28, 2005
Date: 29-Sep-05

Date	Item	Job Number	Total Amount	GST Amount	Basic Amount
26-Sep-05	gas	E6031	61.46	4 01	57 44
26-Sep-05	water	E6031	2.53		2 53
27-Sep-05	meals & accomodation (including tip)	E6031	256.81	12 79	244 02
28-Sep-05	gas	E6031	23.00	1 50	21 50
28-Sep-05	gas	E6031	11.60	0 76	10 84
28-Sep-05	truck rental	E6031	175.78	10 61	164 97
			531.18	79 08	501 30
			Total Claim		Net Claim

Certified Correct: S. Eagen

Approved by: [signature]

SYNERGY GROUP
OCT - 3 2005
FILES

E6031

Job # 5250 = 501.30
G/L Acct:
Description:
GST # 1605: = 79.08
Entered: = $531.18

Rec'd By	Coding	Authorized by / Date
		Oct 3/05

ENTERED SEP 30 2005

PETRO-CANADA
1440 PORTAGE RD
PEMBERTON
BC V0N 2L0

GST #: 856637400
PST #: 364441
PC0351747:6828501

2005-09-26 12:03

PUMP 02
REGULAR
LITRES L 53.032
PRICE/L $ 1.159
FUEL SALES $ 61.46*

TOTAL OWED $ 61.46

CREDIT $ 61.46

TOTAL PAID $ 61.46✓

* GST INCL. $ 4.02✓

VISA
**********8[illegible]
INVOICE [illegible]
AUTH [illegible]

THANK YOU
HAVE A GOOD DAY

****
W DID WE DO TODAY?
LL US & YOU COULD
COULD WIN $1500
IN FREE GAS!

GO TO
W.PETROSURVEY.CA
OR CALL
1 800 341 9925

****

SYNEX GROUP OCT 3 2005 PAID

20839-01
SQUAMISH SHELL
1580-HIGHWAY 99
SQUAMISH BC

8126
VISA
INV# [illegible]
DATE: 09/28/05 [illegible]

PUMP#
PRODUCT DIESEL
LITRES 21.116
PRICE/L $ 1.089
TOTAL FUEL $ 23.00✓
APPROVAL # 035925
SEQ NO. 002-004-030

FUEL INCLUDES:
GST $ 1.50✓
GST #137400032RT

PETRO-CANADA
1440 PORTAGE RD
PEMBERTON
BC VON 2LO

GST: 856637400 (604) 894-5388
PST: 364441
2005-09-26 PC0351750:6828501 12:10

PRODUCT	QTY	PRICE	AMOUNT
1.5L MCLAIR WATER	1	2.29	2.29
Deposit	1	0.20	0.20
ENVIRONMENTAL LEVY	1	0.04	0.04

Total Owed $ 2.53✓

CASH TENDERED 4.03
Total Paid $ 2.53
CHANGE DUE 1.50

Thank You

Thank You
Have a good day

SYNEX GROUP OCT - 3 2005 PAID

****
How did we do today?
Tell us & you
could win $1500
in FREE GAS!

Go to
www.petrosurvey.ca
or call
1 800 341 9925

****

GOLD BRIDGE HOTEL

FERGUSON AVE GENERAL D GOLD BRIDGE

ID: C5520739
SLIP #: 1729
STORE: 5520739

PRE-AUTH $221.81

POURBOIRE/TIP $ 35.00

TOTAL $ 256.81

SIGNATURE X

Visa 0807 *S
4520058002508126

APPROVED AUTH 097250
SEQ 197001001030 ISO -001
Sep 28 2005 7:12 am

THANK YOU

09-27-05

CUSTOMER/CLIENT

GUEST REGISTRATION

REGARDLESS OF CHARGE INSTRUCTIONS, THE UNDERSIGNED GUEST ACKNOWLEDGES THE BELOW AS A PERSONAL INDEBTEDNESS

NAME Stephanie Eagen (PLEASE PRINT)
COMPANY SIGMA ENG. LTD
ADDRESS 1444 ALBERNI ST. 4th FL
CITY VANCOUVER
CREDIT CARD# TYPE
SIGNATURE Stephanie Eagen

RATE $ 99 95	ROOM NO. 11	NO. IN PARTY 1
DATE IN Sept 26	DATE OUT	CLERK INITIAL TD
MAKE OF CAR	CAR LICENCE NO.	PROV.-STATE

PAYMENT RECEIVED BY Visa.

NOTICE TO GUESTS

THIS PROPERTY IS PRIVATELY OWNED AND MANAGEMENT RESERVES THE RIGHT TO REFUSE SERVICE TO ANYONE, AND WILL NOT BE RESPONSIBLE FOR ACCIDENTS OR INJURY TO GUESTS OR FOR LOSS OF MONEY, JEWELRY OR VALUABLES OF ANY KIND.

11:00 A.M. IS CHECKING OUT TIME. GUESTS STAYING OVER PLEASE NOTIFY OFFICE. THE MANAGEMENT RESERVES THE RIGHT TO ASSIGN AND REASSIGN THE GUEST TO SUCH ACCOMMODATION AS THE MANAGEMENT SEES FIT.

WE OPERATE UNDER THE HOTEL KEEPERS ACT.

INVOICE THIS IS THE ONLY ITEMIZED ACCOUNT RENDERED

DAYS OCCUPIED	
SUNDAY	221.81
MONDAY	X
TUESDAY	X VISA
WEDNESDAY	
THURSDAY	PAID
FRIDAY	
SATURDAY	
TOTALS	199 90
G.S.T.	11 19
P.S.T.	12 79
AMOUNT	
RECEIVED ON ACCOUNT	
TOTAL ▶	183.88

THANK YOU FOR YOUR PATRONAGE

OCT - 3 2005

01
*159.90 A ROOM
10 6.99 N 2 lunch
10 *10.99 N 2
10 *3.49 N 2
10 *6.99 N 2
10 *6.99 N 2
*195.35 ST
*11.19 N 1
*2.48 N 2
*12.79 N 3 ✓

*221.81 M

000-5654
7-09

THANK YOU FOR BUYING CHEVRON

BURRARD CHEVRON
1900 BURRARD STREET
VANCOUVER BC SIN #:09900003
GST#872485966

09/28/05 15:53

ITEM	QTY	PRICE	AMOUNT
FULL PUMP 1			
REG	10.242L	$1.133	$11.60

TL/NET/TAX: $11.60 ✓
TOTAL: $11.60
CASH: $15.00
CHANGE: $3.40

$0.76
$0.76 ✓

Enterprise
1 800 rent-a-car

Mtc

OWNER OF VEHICLE: ENTERPRISE RENT-A-CAR CANADA LIMITED GST 889365821
BRANCH ADDRESS: 1696 WEST 1ST AVENUE 604-742-1722
VANCOUVER BC V6J 1G1 C421 SU CLOSED

MO 8:00A- 6:00P TU 8:00A- 6:00P
WE 8:00A- 6:00P TH 8:00A- 6:00P
FR 8:00A- 6:00P SA 9:00A- 4:00P

RENTAL AGREEMENT NO D 863404

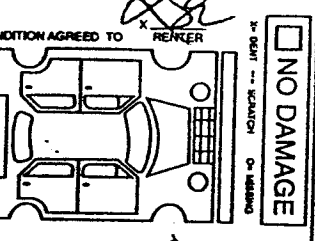
YEAR	DATE
0002 AM	9/26/05

CHARGES IF DIFFERENT

ORIGINAL VEHICLE

COLOUR	LICENCE NO.
SILVER	977BWF
MODEL	UNIT#
LBTY	YUB061
KILOMETRES OUT	5215
KILOMETRES IN	5189
DRIVEN	

CONDITION AGREED TO X RENTER



F E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F
F E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F

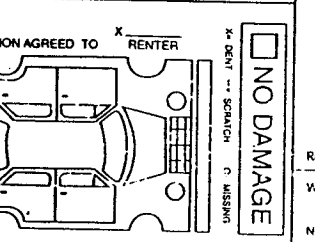
ONAL PRODUCTS NOTICE: OUR RACT OFFERS, FOR AN ADDITIONAL GE, PRODUCTS INCLUDING DAMAGE ER, PERSONAL ACCIDENT ANCE AND PERSONAL EFFECTS ERAGE. BEFORE DECIDING HER TO PURCHASE ANY OF THESE UCTS, YOU MAY WISH TO DETER- WHETHER YOUR PERSONAL INSUR- OR CREDIT CARD PROVIDES YOU RAGE DURING THE RENTAL PERIOD. PURCHASE OF ANY OF THESE NAL PRODUCTS IS NOT REQUIRED NT VEHICLE.

TY FOR LOSS BY ACCIDENT: NG: YOU MAY BE LIABLE FOR LOSS IF E IS USED CONTRARY TO THIS MENT, OR IF LIABILITY TO OTHERS D OUR INSURANCE COVERAGE. SEE RAPH 6 & 7.

EPLACEMENT VEHICLE

DATE OUT	
COLOUR	LICENCE NO.
MODEL	UNIT#
TRES OUT	
TRES IN	
DRIVEN	

CONDITION AGREED TO X RENTER



F E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F
F E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F

RENTAL TYPE	SOURCE#	I.D.#
R	4CA1633	045

RENTER: EAGEN* STEPHANIE*

ADDRESS: 1152F FORGEWLK HOME PHONE: 604-908-2355
CITY: VANCOUVER PROVINCE: BC POSTAL CODE: V6H 3P9 OFFICE PHONE:
DOB: 6/10/65 EMPLOYER:
DRIVER'S LICENCE NO.: 6427461 PROV: BC EXPIRES: 6/10/07

BILL TO: N COMPANY:
ATTN: PHONE: EXT.:
REFERENCE NUMBER:

ADDITIONAL AUTHORIZED DRIVER(S) - EXCEPT AS REQUIRED BY LAW, NONE PERMITTED WITHOUT OWNER'S WRITTEN APPROVAL.
I REQUEST OWNER'S PERMISSION TO ALLOW NO OTHER DRIVER PERMITTED
AGE DRIVER'S LICENCE NO. PROV: EXP.

WHO IS UNDER MY CONTROL AND DIRECTION TO DRIVE VEHICLE FOR ME AND ON MY BEHALF I AM RESPONSIBLE FOR THEIR ACTS WHILE THEY ARE DRIVING, AND FOR FULFILLING TERMS AND CONDITIONS OF THIS RENTAL AGREEMENT (AGREEMENT). USE OF VEHICLE BY AN UNAUTHORIZED DRIVER WILL AFFECT MY LIABILITY AND RIGHTS UNDER THIS AGREEMENT.
RENTER: X

PERMISSION GRANTED TO OPERATE VEHICLE ONLY IN THE PROVINCE OF RENTAL AND THE FOLLOWING PROVINCE(S) OR STATES:
BC ONLY
OPERATION IN ANY OTHER PROVINCE OR COUNTRY WILL AFFECT YOUR LIABILITY AND RIGHTS UNDER THIS AGREEMENT.

RENTER DECLINES OPTIONAL DAMAGE WAIVER (DW) AND ASSUMES DAMAGE RESPONSIBILITY. SEE PAGE 2, PARAGRAPH 5.
RENTER: X Declines DW

RENTER ACCEPTS OPTIONAL DAMAGE WAIVER (DW) AT DAILY FEE SHOWN IN COLUMN TO RIGHT. RENTER IS RELIEVED OF DAMAGE RESPONSIBILITY UP TO AMOUNT INITIALLED. SEE OPTIONAL PRODUCTS NOTICE TO LEFT AND PAGE 2, PARAGRAPH 15. DW IS NOT INSURANCE.
X DAMAGE LESS $_____, SEE 15A Accepts DW
X UP TO $500 DEDUCTIBLE, SEE 15B

RENTER DECLINES OPTIONAL PERSONAL ACCIDENT INSURANCE (PAI).
RENTER: X Declines PAI

RENTER ACCEPTS OPTIONAL PERSONAL ACCIDENT INSURANCE (PAI) AT DAILY FEE SHOWN IN COLUMN TO RIGHT. SEE OPTIONAL PRODUCTS NOTICE TO LEFT AND PAGE 3, PARAGRAPH 16.
RENTER: X Accepts PAI

RENTER DECLINES OPTIONAL PERSONAL EFFECTS COVERAGE (PEC)
RENTER: X Declines PEC

RENTER REQUESTS OPTIONAL PERSONAL EFFECTS COVERAGE (PEC) AT DAILY FEE SHOWN IN ADJACENT COLUMN. SEE OPTIONAL PRODUCTS NOTICE TO LEFT AND PAGE 3, PARAGRAPH 17
RENTER: X PEC

ACKNOWLEDGMENT OF THE ENTIRE AGREEMENT, WHICH CONSISTS OF PAGES 1 THROUGH 4: I HAVE READ AND AGREE TO THE TERMS AND CONDITIONS ON PAGES 1 THROUGH 4 OF THIS AGREEMENT, AND BY MY SIGNATURE BELOW I AM THE "RENTER" UNDER THIS AGREEMENT. BY SIGNING BELOW, I AM AUTHORIZING OWNER TO PROCESS CHARGES ON MY CREDIT CARD(S) AND/OR DEBIT CARD(S) FOR ADVANCE DEPOSITS, INCREMENTAL AUTHORIZATIONS/DEPOSITS AND CHARGES INCURRED, AS WELL AS PAYMENTS REFUSED BY A THIRD PARTY TO WHOM BILLING WAS DIRECTED. I CERTIFY THAT THE DRIVER'S LICENCE(S) PRESENTED IS CURRENTLY VALID AND IS NOT SUSPENDED, EXPIRED, REVOKED, CANCELLED OR SURRENDERED.
VOIR AU RECTO LA VERSION FRANÇAISE DE CE CONTRAT, PAGES 1 À 4.

RENTER: X Stephanie Eagen DATE: 9/26/05
OWNER REP: X EMPL.#: 807BF

I WILL RETURN CAR BY: DATE	TIME	DEPOSIT(S): AMOUNT	PAID BY	DATE PAID
9/29/05	08:02 AM	500.00	CCAUTH812A	9/26/2005

RENTER IS RESPONSIBLE FOR ANY AND ALL DAMAGES UNTIL AN EMPLOYEE OF OWNER CHECKS IN VEHICLE.

WINDSHIELD CONDITION
NO DAMAGE X
DAMAGE AS NOTED BELOW X_____

DAY = 24 HOUR PERIOD
NO CHARGE FOR KMS

HOURS @ 20.00/HOUR
DAYS 3 x 49.99/DAY 149.97

PVRT 3 x 1.50/DAY 4.5

SYNEX GROUP
OCT - 3 2005
PAID
Company
by Synex International

FUEL @ 1.25/LITRE
GST 7.000 % 10.81

PST/TVP 7.0 % 10.50

TOTAL CHARGES 175.78
DEPOSITS
REFUNDS
AMOUNT DUE

CLOSED BY
PAID BY CASH | CHEQUE | CHARGE
RECEIPT OF CASH REFUND | DATE | AMOUNT | RECEIVED BY

INVOIC

ACCOUNT BILLING CONTROL REPORT
Long Distance Summary by Account

Account	Total Calls	Total Minutes	Full Charges	Discounted Charges	Taxes	Total
20100	1	5:24	2.88	0.43	0.06	0.49
206053	8	11:42	7.01	1.11	0.15	1.26
21000	2	4:30	2.34	0.36	0.05	0.41
21011	9	12:30	7.21	1.00	0.14	1.14
26053	228	1695:36	908.52	185.21	25.92	211.13
533059 - SERL	1	2:06	1.59	0.21	0.02	0.23
64006 - KPL	1	0:30	0.30	0.04	0.00	0.04
40100	2	3:00	1.38	0.24	0.03	0.27
404006 KPL	23	69:24	29.01	5.83	0.81	6.64
40598 } 41000	1	0:54	0.46	0.07	0.00	0.07
40604 }	1	18:12	5.70	1.46	0.20	1.66
406075	15	83:24	162.00	47.35	6.62	53.97
40614 - 41000	2	4:42	1.50	0.37	0.05	0.42
41000	13	31:48	12.65	2.55	0.35	2.90
41005	2	1:54	0.93	0.15	0.02	0.17
45515	4	14:06	7.75	1.28	0.17	1.45
45928	1	14:12	6.90	1.14	0.15	1.29
46023	2	5:36	1.95	0.44	0.06	0.50
46031	2	2:00	0.99	0.16	0.02	0.18
46046	2	24:24	7.80	1.95	0.27	2.22
46057 - 41000	1	2:24	0.93	0.19	0.02	0.21
46060 - 41000	1	1:18	0.60	0.10	0.01	0.11
46075	175	687:30	273.63	57.63	8.06	65.69
46079	3	4:18	2.12	0.34	0.04	0.38
46131	4	10:06	4.86	0.91	0.12	1.03
46132	1	45:48	16.10	3.66	0.51	4.17
46134	4	63:12	22.40	5.06	0.70	5.76
46142	13	271:36	101.53	21.74	3.04	24.78
50100	1	2:30	1.68	0.25	0.03	0.28
802007 - SWLL	5	16:54	11.14	1.69	0.23	1.92
50305 - 51000	7	19:00	11.20	1.83	0.25	2.08
50306 - 51000	4	5:30	2.22	0.44	0.06	0.50
503100	5	9:30	4.74	0.76	0.10	0.86
51005	3	2:18	1.52	0.19	0.02	0.21
82007	1	15:42	8.96	1.57	0.21	1.78
53059	8	32:00	10.19	2.56	0.35	2.91
53060	9	90:48	32.35	7.57	1.05	8.62
53066	1	1:06	0.62	0.09	0.01	0.10
53100	2	16:36	5.57	1.33	0.18	1.51
53101	7	5:06	3.36	0.40	0.05	0.45
604006	8	31:54	14.38	2.54	0.35	2.89
61000	12	38:00	16.84	3.27	0.45	3.72
64006	33	175:00	61.59	14.06	1.96	16.02
802007	98	237:36	148.57	23.49	3.28	26.77
82007	21	119:12	72.24	11.92	1.66	13.58

DHL

Invoice Date	AUG 26 2005
Domestic Account No	EF6565
Invoice No	552
Collection Branch	040

LINE	DATE	WAYBILL NUMBER/ REFERENCE NUMBER	SHIP/REC	FROM	TO	SRV	BILLED WEIGHT	FREIGHT CHARGES	GST	OTHER TAXES	PAYABLE
00001	AUG0905	NET8659601 – Don't pay. E6152 Invalid.	Land and W P	VANCOUVER	PRINCE GEO	PG	2.0	8.65	0.61	0.00	9.26
00002	AUG0905	NET8660321 E6152	Land and W P	VANCOUVER	PRINCE GEO	PG	2.0	16.85 ✓	1.18	0.00	18.03
00003	AUG1105	NET8681971 E6031	Ministry o P	VANCOUVER	VICTORIA	PG	0.9	7.70 ✓	0.54	0.00	8.24
00004	AUG1205	NET8701711 Y3101	The Fluid P	VANCOUVER	EDMONTON	PG	2.0	16.85 ✓	1.18	0.00	18.03
00005	AUG2305	NET8782661 W2007	Gladwin Co P	VANCOUVER	GOADWIN	PE	0.9	31.10 ✓	0.00	0.00	31.10
00006	AUG2405	NET8794401 W2007	Sterling E P	VANCOUVER	WEST BRANC	PE	5.0	60.55 ✓	0.00	0.00	60.55
00007		TEF6565552 E1000		TRAN FEE	TRAN FEE		0.0	1.75 ✓	0.12	0.00	1.87
										TOTAL THIS INVOICE	$147.08

137.82

ENTERED SEP 22 2005

BILLED SEP 30 2005

Job # 5310 = 16.30 ✓
G/L Acct: 5335 = 16.85 ✓
Description: 5325 = 91.65 ✓
GST # 1605: = 3.02
Entered: = $ 137.82

Rec'd By	Coding	Authorized by / Date
	PP	OK cel Sep 27/05

Service Codes

PE	Prepaid Express
PG	Prepaid Ground
PI	Prepaid International
CE	Collect Express
CG	Collect Ground

Payable within 7 days

Overdue accounts are subject to finance charges of 1.80% per month (26.95% per annum compounded)

GST Registration	12208 2753 RT0001
QST Registration	1003663872-TV001
HST Registration	12208 2753 RT0001

SYNERGY COOP

Please detach and forward with your payment

September 2005
Photocopies

Dept.	Job #	# of copies	subtotal (@ $0.15/copy)	
2	1000	33		
2	1000	4		
1000 Total		**37**	**5.55**	
2	1004	124		
1004 Total		**124**	**18.60**	
2	1005	127		
2	1005	218		
2	1005	15		
2	1005	1		
1005 Total		**361**	**54.15**	
2	1011	177		
2	1011	24		
1011 Total		**201**	**30.15**	
		SYNEX INTERNATIONAL INC.		**108.45**
2	6053	4258		
6053 Total		**4258**	**638.70**	
			BECHTEL	**638.70**
4	1000	60		
4	1000	26		
4	1000	78		
4	1000	216		
4	1000	2		
4	1000	2		
4	1000	14		
4	1000	18		
1000 Total		**416**	**62.40**	
4	1005	227		
4	1005	39		
4	1005	19		
1005 Total		**285**	**42.75**	
4	5515	56		
4	5515	13		
5515 Total		**69**	**10.35**	
4	5984	11		
5984 Total		**11**	**1.65**	
4	6023	28		
4	6023	10		
4	6023	6		
6023 Total		**44**	**6.60**	
4	6031	2		
6031 Total		**2**	**0.30**	
4	6075	25		
4	6075	10		
6075 Total		**35**	**5.25**	
4	6099	15		
6099 Total		**15**	**2.25**	
4	6104	5		
6104 Total		**5**	**0.75**	
4	6107	9		
6107 Total		**9**	**1.35**	
4	6133	4		
4	6133	3		
6133 Total		**7**	**1.05**	
4	6142	125		
4	6142	2		
4	6142	12		
6142 Total		**139**	**20.85**	
4	6156	6		
6156 Total		**6**	**0.90**	
		SIGMA ENGINEERING LTD.		**156.45**

SIGMA ENGINEERING LTD
1444 Alberni Street, Suite 400
Vancouver, BC V6G 2Z4
Telephone: (604) 688-8271

INVOICE NO: CR6031 A

GST# R104852421

Here is our invoice for: **November 2005**

Job: E6031 A
Project # 05.BR.01

BC Hydro
6911 Southpoint Drive
Burnaby, BC
V3N 4X8

Re: Bridge Coastal - Downton Reservoir

PERSONNEL		HOURS	RATE	AMOUNT
S. Eagen	Biologist	9.0	72.00	648.00
			TOTAL PERSONNEL	**$648.00**

EXPENSES

0	x	1.05	**$0.00**
		TOTAL PERSONNEL AND OTHER EXPENSES	**$648.00**
		GOODS AND SERVICES TAX @ 7%	**$45.36**
		TOTAL BILLING	**$693.36**
		ADVANCED PAYMENT BALANCE	**($1,712.13)**
		CREDIT BALANCE (PLEASE DO NOT PAY)	**($1,018.77)**

TERMS: NET 30 DAYS
INTEREST ON OVERDUE ACCOUNTS MAY BE CHARGED AT 1.5% PER MONTH
EQUIVALENT TO 19.56% PER ANNUM

SIGMA ENGINEERING LTD
1444 Alberni Street, Suite 400
Vancouver, BC V6G 2Z4
Telephone: (604) 688-8271

INVOICE NO: CR6031 A

GST# R104852421

Here is our invoice for: **December 2005**

Job: E6031 A
Project # 05.BR.01

BC Hydro
6911 Southpoint Drive
Burnaby, BC
V3N 4X8

Re: Bridge Coastal - Downton Reservoir

PERSONNEL		HOURS	RATE	AMOUNT
G. S. McDonnell	Manager	1.0	127.00	127.00
S. Eagen	Biologist	14.0	72.00	1,008.00
			TOTAL PERSONNEL	**$1,135.00**

EXPENSES

0	x	1.05	**$0.00**
		TOTAL PERSONNEL AND OTHER EXPENSES	**$1,135.00**
		GOODS AND SERVICES TAX @ 7%	**$79.45**
		TOTAL BILLING	**$1,214.45**
		ADVANCED PAYMENT BALANCE	**($1,018.77)**
		DEBIT BALANCE (PLEASE PAY THIS AMOUNT)	$195.68

TERMS: NET 30 DAYS
INTEREST ON OVERDUE ACCOUNTS MAY BE CHARGED AT 1.5% PER MONTH
EQUIVALENT TO 19.56% PER ANNUM

hydro

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
BRITISH COLUMBIA, CANADA
PLEASE DETACH BEFORE DEPOSITING

V 0004

311283

Vendor Number 0000502073 Sigma Engineering Ltd. Check Date: 22.Apr.2005 Check No. 311283

INVOICE NUMBER		AMOUNT	DISCOUNT	NET AMOUNT
P001729	'B'-Clowhom River	4,958.00 (PE6031)	0.00	4,958.00 ✓
PROJECT #05.CL.01				
P001731	'A'-Downton Reservoir	4,977.00 (PE6031)	0.00	4,977.00 ✓
PROJECT #05.BR.01				

Bridge Coastal

RECEIVED APR 26 2005

Vendor Number

VOICE NUMBER	AMOUNT		
P001729	4,958.00 (PE6031)	0.00	4,958.00
ROJECT #05.CL.01			
P001731	4,977.00 (PE6031)	0.00	4,977.00
ROJECT #05.BR.01			

Bridge Coastal

RECEIVED APR 26 2005

Apr 28 05

Prepaid INVOICE

PE6031

June/July/Aug.

p on eye for

invoice of

031

G/L # was 3150

TOTALS $9,935.00 $0.00 $9,935.00

APPENDIX II

Project # 05.Br.01

Performance Measures

Using the performance measures applicable to your project, please indicate the amount of habitat actually restored/enhanced for each of the specified areas (e.g. riparian, tributary, mainstream).

Performance Measures – Target Outcomes													
Project Type	**Primary Habitat Benefit Targeted of Project (m^2)**	**Primary Target Species**	**Habitat (m^2)**										
			Estuarine	In-Stream Habitat – Mainstream	In-stream Habitat – Tributary	Riparian	Reservoir Shoreline Complexes	Riverine	Lowland Deciduous	Lowland Coniferous	Upland	Wetland
Impact Mitigation												
Fish passage technologies	Area of habitat made available to target species				X	X						
Drawdown zone revegetation/stabilization	Area turned into productive habitat											
Wildlife migration improvement	Area of habitat made available to target species											
Prevention of drowning of nests, nestlings	Area of wetland habitat created outside expected flood level (1:10 year)											
Habitat Conservation												
Habitat conserved – general	Functional habitat conserved/replaced through acquisition and mgmt											
	Functional habitat conserved by other measures (e.g. riprapping)											
Designated rare/special habitat	Rare/special habitat protected											
Maintain or Restore Habitat forming process												
Artificial gravel recruitment	Area of stream habitat improved by gravel plmt.											
Artificial wood debris recruitment	Area of stream habitat improved by LWD plcmt											
Small-scale complexing in existing habitats	Area increase in functional habitat through complexing											
Prescribed burns or other upland habitat enhancement for wildlife	Functional area of habitat improved											
Habitat Development												
New Habitat created	Functional area created											

BCRP PROJECT # 05.BR.01

APPENDIX III

SITES ASSESSED

Site 1 Culvert Assessment

Photo 001 Downstream view of inlet

Photo 002 Channel upstream of inlet

Photo 003 Outfall drop

Photo 004 Channel downstream of outfall.

Site 2 Culvert Assessment

Photo 006 Inlet upstream photo

Photo 007 Inlet downstream photo

Photo 008 Outlet upstream photo

Photo 009 Outlet downstream photo

Photo 030 Inlet downstream photo

Photo 031 Inlet upstream photo

Site 3 Culvert Assessment

Photo 032 Outlet upstream photo

Photo 033 Outlet downstream photo

Site 4 Culvert Assessment

Photo 035 Outfall upstream photo

Photo 036 Outfall downstream photo

Photo 037 Inlet upstream photo

Photo 038 Inlet downstream photo

Site 5 Culvert Assessment

Photo 039 Inlet upstream photo

Photo 040 Inlet downstream photo

Site 5 Culvert Assessment

Photo 041 Outfall upstream photo

Photo 042 Outfall downstream photo

BCRP PROJECT # 05.BR.01
APPENDIX IV
SITES NOT ASSESSED

Photo 010 Upstream of inlet – vertical seep.

Photo 011 Downstream view of outlet.

Photo 012 Downstream of outfall – no channel.

Photo 013 Upstream of inlet – close up of vertical seep.

Photo 016 Upstream of culvert – no channel.

Photo 017 Culvert outfall.

Photo 018 Downstream of outfall – no channel.

WP 018 & WP 019 – Sites Not Assessed

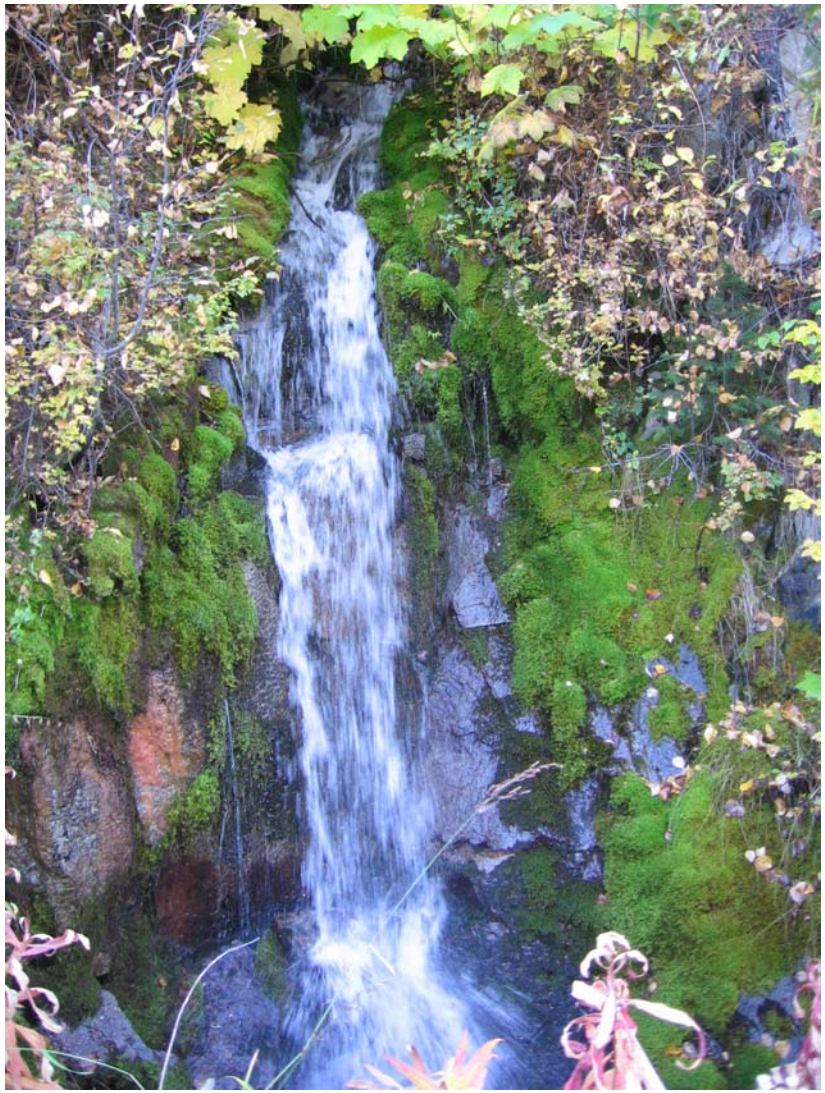


Photo 019 WP 018 Upstream of culvert – bedrock falls – no fish habitat

Photo 020 Upstream of Culvert 12.1 km along Bridge River FSR - no fish habitat.

Photo 021 WP 019 Upstream of culvert.

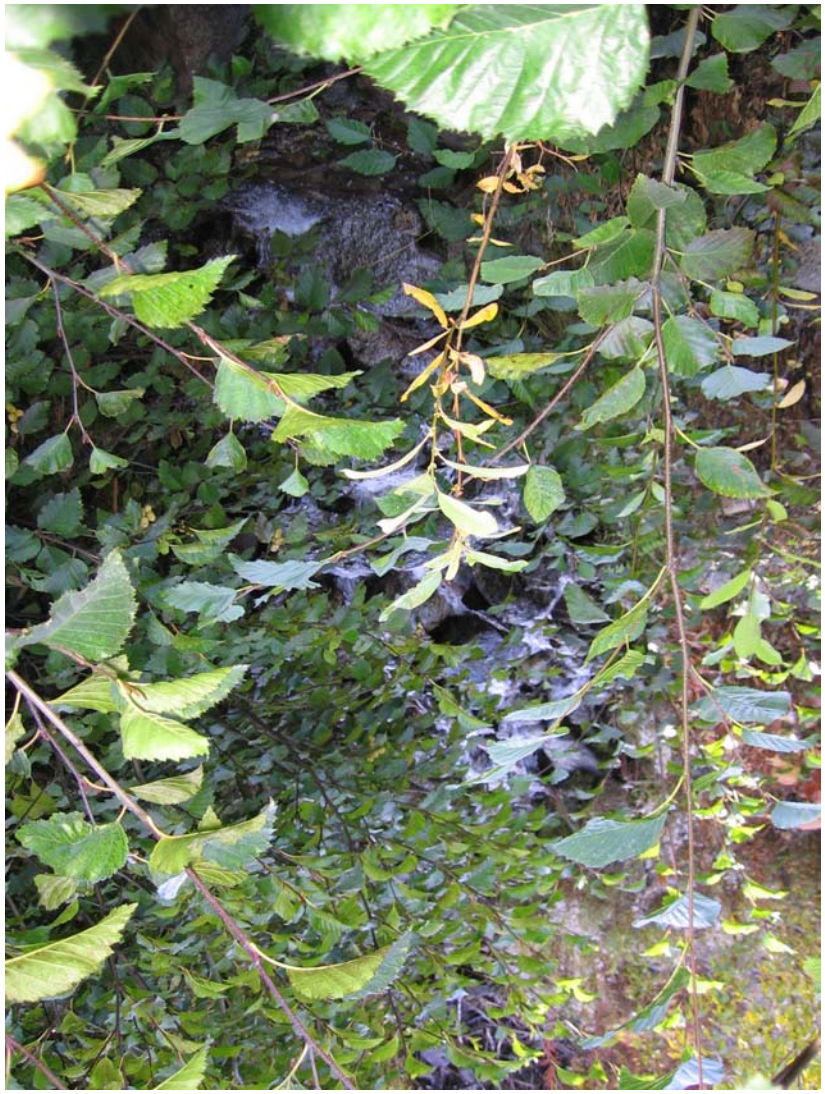


Photo 023 WP 020 Upstream view of channel above inlet-step-pool habitat, high gradient.

Photo 024 WP 020 View of culvert from side showing outfall drop.

Photo 025 WP 020 Channel downstream of outlet – high gradient boulder cascade.

Photo 026 WP 022 Bedrock seep upstream of inlet.

APPENDIX V

Form A – Fish Passage – Culvert Inspection – Side 1

Date (mm/dd/yy)	9 / 26 / 2005	Stream Name	unnamed
Road Name/ID#	Bridge River FSR	Road Location (MoF district)	
UTM/GPS Location	10 509300 . 5628795	Watershed Code	
1:20 000 Map Sheet	92 J . 086	Recorders Name	SE
Site Number	1		

2.28 km
2.28 KM

Culvert Characteristics:

Culvert Diameter (mm)	1400 mm	Culvert Slope (%)	Us	Ds 3 %
Culvert Length (m)	21 m	High Water Mark (cm)	12 cm	
Culvert Material	corrugated	Culvert Water Depth (cm)	~~13~~ 4 cm	
Culvert Water Velocity (m•sec-1)		Culvert Outfall Drop (cm) ~~170~~	170 cm	
Culvert Shape	round	Culvert Maintenance	Hi / (Mod) / L / No	
Culvert Wetted Width (cm)	30 cm	Fill Slope Depth (m)	m	

Stream Characteristics: step-pool- boulder; riparian cover abundant, deciduous) not deep enough for MT sets

Stream Reach		Stream Classification	S1 S2 S3 S4 S5 S6 P
Pool Depth at Outfall (cm)	4 cm	Blue Listed/Significant	
Sediment Source/Degree	Yes / No – Hi / Mod / L		

Measure	Measurement(s) Below Culvert			Measurement(s) Above Culvert			Average Measurement
Wetted Width (m)	40	70		70	100	100	m
Bankfull Width (m)	2	1.5		70	100	100	m
Water Depth (cm)	4			4	6	7	cm
Bankfull Depth (cm)				4	4	28	cm
Stream Water Velocity (m•sec-1)							m•s-1
Stream Gradient (%)	30			28			%
Fish Presence	Yes / No / (No survey)			Yes / No / (No survey)			NA
Fish Sampling Method							NA
Sampling Effort (time)							NA
Species Present							NA
Beaver Activity/Type							NA

Barrier Evaluation:

Barrier	(Full) Partial None Undetermined
Barrier Type	culvert outfall drop

Site Photos:

Roll # digital

Inlet upstream photo # 3139 Inlet downstream photo # 3137

Outlet upstream photo # 3133 . 032 Outlet downstream photo # 3153

Form A – Fish Passage – Culvert Inspection – Side 1

Date (mm/dd/yy)	2005 / 26 / 2005	**Stream Name**	Gingrich Creek
Road Name/ID#	Bridge Fine. FSR	**Road Location (MoF district)**	
UTM/GPS Location	10 508415 6287313	**Watershed Code**	
1:20 000 Map Sheet	92 J. 036	**Recorders Name**	SE
Site Number	1		

Culvert Characteristics:

Culvert Diameter (mm)	1200 mm	**Culvert Slope (%)**	Us 7 | Ds %
Culvert Length (m)	4.7 m	**High Water Mark (cm)**	cm
Culvert Material	corrugated	**Culvert Water Depth (cm)**	2 cm
Culvert Water Velocity (m•sec-1)		**Culvert Outfall Drop (cm)**	40 cm
Culvert Shape	round	**Culvert Maintenance**	Hi / Mod / L / No
Culvert Wetted Width (cm)	3 cm	**Fill Slope Depth (m)**	m

Stream Characteristics: Step pool below culvert; 1.2m Falls upstream / cascade d/s culvert
Stream water velocity - not measured due to morphology / streambed sediment

Stream Reach		**Stream Classification**	S1 S2 S3 S4 S5 S6 P
Pool Depth at Outfall (cm)	cm	**Blue Listed/Significant**	
Sediment Source/Degree	Yes / No – Hi / Mod / L		

Measure	Measurement(s) Below Culvert			Measurement(s) Above Culvert			Average Measurement
Wetted Width (m)	3.5	3	3	2	2.1	1.9	m
Bankfull Width (m)	3	5	4.4	4	3.6	3	m
Water Depth (cm)	6	6	8	4	7	5	cm
Bankfull Depth (cm)	63	40	56	42	32	40	cm
Stream Water Velocity (m•sec-1)							m•s-1
Stream Gradient (%)	15			3			%
Fish Presence	Yes / No / No survey			Yes / No / No survey			NA
Fish Sampling Method							NA
Sampling Effort (time)							NA
Species Present							NA
Beaver Activity/Type							NA

Barrier Evaluation:

Barrier	**Full**	**Partial**	**None**	**Undetermined**
Barrier Type				

Site Photos:

Roll # _____

Inlet upstream photo # 4:37 Inlet downstream photo # 4:37

Outlet upstream photo # 4:51 Outlet downstream photo # 4:55

Form A – Fish Passage – Culvert Inspection – Side 1

Date (mm/dd/yy)	09 /27 / 2005	Stream Name	unnamed
Road Name/ID#	Bridge R FSR	Road Location (MoF district)	
UTM/GPS Location	10. 4492084. 5696255	Watershed Code	
1:20 000 Map Sheet	[illegible]	Recorders Name	[illegible]
Site Number	[illegible]		

Culvert Characteristics:

Culvert Diameter (mm)	1450 mm	Culvert Slope (%)	Us / Ds 4 %
Culvert Length (m)	[illegible] m	High Water Mark (cm)	10 cm
Culvert Material		Culvert Water Depth (cm)	3 cm
Culvert Water Velocity (m•sec-1)		Culvert Outfall Drop (cm)	36 cm
Culvert Shape	[illegible]	Culvert Maintenance	Hi / Mod / L / No
Culvert Wetted Width (cm)	29 cm	Fill Slope Depth (m)	m

Stream Characteristics: cascade - boulder [illegible] [illegible] [illegible] subsurface flow 45% slope, no natural channel 20 30m, high gradient [illegible]

Stream Reach		Stream Classification	S1 S2 S3 S4 S5 S6 P
Pool Depth at Outfall (cm)	N/A cm	Blue Listed/Significant	
Sediment Source/Degree	Yes / No – Hi / Mod / L		

Measure	Measurement(s) Below Culvert			Measurement(s) Above Culvert			Average Measurement
Wetted Width (m)				72	90	60	74 m
Bankfull Width (m)				140	130	91	120 m
Water Depth (cm)				[illegible]	5	7	5.2 cm
Bankfull Depth (cm)				20	[illegible]	22	17.3 cm
Stream Water Velocity (m•sec-1)							m•s-1
Stream Gradient (%)				[illegible]			%
Fish Presence	Yes / No / No survey			Yes / No / No survey			NA
Fish Sampling Method							NA
Sampling Effort (time)							NA
Species Present							NA
Beaver Activity/Type							NA

Barrier Evaluation:

Barrier	Full Partial None Undetermined
Barrier Type	

Site Photos:

Roll # ____________

Inlet upstream photo # [illegible]

Inlet downstream photo # [illegible]

Outlet upstream photo # 1140

Outlet downstream photo # 1146 boulder [illegible]

Form A – Fish Passage – Culvert Inspection – Side 1

Date (mm/dd/yy)	9 / 27 / 2006	Stream Name	[illegible]
Road Name/ID#	BRIDGE RIVER FSR	Road Location (MoF district)	
UTM/GPS Location	[illegible]	Watershed Code	
1:20 000 Map Sheet	[illegible]	Recorders Name	[illegible]
Site Number	4		

Culvert Characteristics:

Culvert Diameter (mm)	750 mm	Culvert Slope (%)	Us [illegible] / Ds / %
Culvert Length (m)	m	High Water Mark (cm)	40 cm
Culvert Material	corrugated steel	Culvert Water Depth (cm)	~~40~~ 14 cm
Culvert Water Velocity (m•sec-1)		Culvert Outfall Drop (cm)	42 cm
Culvert Shape	round	Culvert Maintenance	(Hi) / Mod / L / No
Culvert Wetted Width (cm)	50 cm	Fill Slope Depth (m)	m

Stream Characteristics: BOULDER STEP POOL w FALLS NO REARING HABITAT

1/4 boulder riprap 45% slope; natural channel 20 [illegible] [illegible] 6m [illegible] no discernable bend in place (overland flow)

SPB [illegible]

Stream Reach		Stream Classification	S1 S2 S3 S4 S5 S6 P
Pool Depth at Outfall (cm)	NONE cm	Blue Listed/Significant	
Sediment Source/Degree	Yes / (No) – Hi / Mod / L		

Measure	Measurement(s) Below Culvert			Measurement(s) Above Culvert			Average Measurement
Wetted Width (m)				4	4.5		4.25 m
Bankfull Width (m)				4	4		4 m
Water Depth (cm)				14.9	13.6		10 cm
Bankfull Depth (cm)				25	13		19 cm
Stream Water Velocity (m•sec-1)							m•s-1
Stream Gradient (%)				32			%
Fish Presence	Yes / No / No survey			Yes / No / No survey			NA
Fish Sampling Method							NA
Sampling Effort (time)							NA
Species Present							NA
Beaver Activity/Type							NA

Barrier Evaluation:

Barrier	Full	Partial	None	Undetermined
Barrier Type				

Site Photos: high velocity [illegible] boulders [illegible] 1.4m

1.4m
1.44 [illegible]

Roll # ______

Inlet upstream photo # 236 [illegible] Inlet downstream photo # 237

Outlet upstream photo # 237 [illegible] Outlet downstream photo # ~~237~~ 232 [illegible] ~~234~~ u/s [illegible]

Form A – Fish Passage – Culvert Inspection – Side 1

Date (mm/dd/yy)	? / 27 / 2005	**Stream Name**	[illegible]
Road Name/ID#	Br. Asp River FSR	**Road Location (MoF district)**	
UTM/GPS Location	[illegible]	**Watershed Code**	
1:20 000 Map Sheet		**Recorders Name**	[illegible]
Site Number	Site 5		

Culvert Characteristics: _____

Culvert Diameter (mm)	1200 mm	**Culvert Slope (%)**	Us / Ds [illegible] %
Culvert Length (m)	m	**High Water Mark (cm)**	44 cm
Culvert Material	corr. Steel	**Culvert Water Depth (cm)**	15 cm
Culvert Water Velocity (m•sec-1)		**Culvert Outfall Drop (cm)**	35 cm
Culvert Shape	round	**Culvert Maintenance**	Hi / Mod / L / No
Culvert Wetted Width (cm)	75 cm	**Fill Slope Depth (m)**	m

Stream Characteristics: [illegible]

Stream Reach		**Stream Classification**	S1 S2 S3 S4 S5 S6 P
Pool Depth at Outfall (cm)	None cm	**Blue Listed/Significant**	
Sediment Source/Degree	Yes / No – Hi / Mod / L		

Measure	Measurement(s) Below Culvert			Measurement(s) Above Culvert			Average Measurement
Wetted Width (m)	4	2	4	4	6		3.5 m
Bankfull Width (m)	5	3.5	9.76	7	7		7 m
Water Depth (cm)	[illegible]		10	23.17	[illegible]		21.4 cm
Bankfull Depth (cm)	30			35 20	50		40 cm
Stream Water Velocity (m•sec-1)							m•s-1
Stream Gradient (%)	3			[illegible]			%
Fish Presence	Yes / No / No survey			Yes / No / No survey			NA
Fish Sampling Method							NA
Sampling Effort (time)							NA
Species Present							NA
Beaver Activity/Type							NA

Barrier Evaluation:

Barrier	Full	Partial	None	Undetermined
Barrier Type				

Site Photos:

Roll # _____

Inlet upstream photo # [illegible] Inlet downstream photo # [illegible]

Outlet upstream photo # [illegible] Outlet downstream photo # [illegible]

APPENDIX VI

BRITISH COLUMBIA

RECEIVED AUG 2 2 2005

FISH COLLECTION PERMIT
Environmental Impact Assessment

File: 34770-20

Permit No.: SU/KA05-16262

Permit Holder: Sigma Engineering Ltd—Stephanie Eagen
1444 Alberni St, 4th Floor, Vancouver, BC V6G 2Z4

Client No.: 1073

Authorized Persons: Stephanie Eagen

Pursuant to section 19 of the *Wildlife Act*, RSBC 1996, Chap. 488, and section 18 of the Angling and Scientific Regulations, BC Reg. 125/90, the above named persons are hereby authorized to collect fish for scientific purposes from non-tidal waters subject to the conditions set forth in this Permit:
Permitted Waters: Lower Mainland and Thompson Region—Downton Reservoir (100-241900) and Clowhom River (900-178900)
Permitted Times: August 15, 2005 to September 30, 2005
Permitted Species: All Species (subject to terms and conditions)
Permitted Gear: MT

General Conditions (Permit holders must be aware of all terms and conditions):
1. See Appendix A.

Special Conditions:
N/A

Authorized by:
Yvonne Foxall
Manager
Permit and Authorization Service Bureau

Yfoxall

Date: August 17, 2005 Permit Fee $25

Any contravention or failure to comply with the terms and conditions of this permit is an offense under the *Wildlife Act*, RSBC 1996, Chap. 488 and B.C. Reg. 125/90.

Ministry of Environment
Environmental Stewardship Division
Permit Authorization Service Bureau
4th fl, 2975 Jutland Rd
PO Box 9372 Stn Prov Gov
Victoria BC V8W 9M3
Telephone: 1.866.433.7272
Facsimile: (250) 387-0922

Appendix A: Fish Collection Permit Conditions

Any Variation of the following terms and conditions will require explicit authorization by the appropriate regional Fish & Wildlife Section Head.

Provincial Conditions

1. This collecting permit is not valid
   - in national parks,
   - in provincial parks unless a Park Use Pemit is also obtained,
   - in tidal waters,
   - for species listed as threatened, endangered or extirpated under the Species at Risk Act (SARA)*,
   - for eulachon or for salmon* other than kokanee, or
   - for collecting fish by angling unless the permittee and crew members possess a valid angling licence.

   *Contact the Department of Fisheries and Oceans for fish collecting permits for salmon, eulachon or SARA listed species (see Appendix B).

2. The permittee (or the project supervisor) named on the application for a scientific collection permit will carry a copy of this permit while engaged in fish collecting and produce it upon request of a conservation officer, fisheries officer or constable.

3. Any specimens surplus to scientific requirements and any species not authorized for collection in this permit shall be immediately and carefully released at the point of capture.

4. Fish collected under authority of this permit shall not be used for food or any purpose other than the objectives set out in the approved application for a scientific collection permit. The permittee shall not sell, barter, trade, or give away, or offer to sell, barter, trade or give away fish collected under authority of this permit. Dead fish shall be disposed of in a manner that will not constitute a health hazard, nuisance or a threat to wildlife.

5. No fish collected under authority of this permit shall be
   - transported alive unless authorized by this permit, or
   - transplanted unless separately authorized by the Federal/Provincial Fish Transplant Committee.

6. The permittee shall, within 90 days of the expiry of this permit, submit to the Permit and Authorization Service Bureau a summary report of collecting activities. Interim reports may also be required and shall be submitted as required by the permit issuer. All submissions must be filed electronically to: `http://srmwww.gov.bc.ca/rib/fish_permit/index.html`. PDF Reports, PDF Maps and sampling data submitted in the Field Data Information System (FDIS for short) are not mandatory but are encouraged when available. Prior notification of submission, or questions regarding data report standards can be made to: fishdatasub@victoria1.gov.bc.ca.

7. This collecting permit is subject to cancellation at any time and shall be surrendered to a conservation officer on demand or to the issuer upon written notice of its cancellation.

8. This permit is valid only for the activities approved on the application form and in accordance with any restrictions set out therein.

9. This permit is valid only for trained, qualified staff named in the Application. The permittee will comply with all Worker's Compensation Board requirements and other regulatory requirements. Permit holders are responsible for ensuring staff members listed on the permit are properly certified for specific sampling methods or activities (e.g. electroshocking).

10. All sampling equipment that has been previously used outside of B.C. must be cleaned of mud and dirt and disinfected with 100mg/L chlorine bleach before using in any water course to prevent the spread of fish pathogens (e.g. Whirling disease) and / or invasive plant species. Any washed off dirt or mud must be disposed of in a manner such that it cannot enter a watercourse untreated.

11. No electrofishing is to take place in waters below five degrees C.

12. Electrofishing may not be conducted in the vicinity of spawning gravel, redds, or spawning fish, or around gravels which are capable of supporting eggs or developing embryos of any species of salmonid at a time of year when such eggs or embryos may be present.

13. Permits covering multiple watersheds or extended time periods:
    a. Are applicable only in the identified regions and for the identified time periods;
    b. Do not apply to the collection of adult salmonids unless specifically authorized;
    c. Include electrofishing, minnow trapping and seining techniques only;

    Please print out the notice verifying the information you submit as it becomes part of your permit and must be attached to your original Scientific Fish Collection Permit.

Region Specific Conditions

Region 2 (Lower Mainland)

- Any fish collection activities taking place in waters known to harbour steelhead trout must have the express approval of the Regional Fish and Wildlife Section Head.
- Please refer to the following website for the least risk in-stream work windows: http://wlapwww.gov.bc.ca/sry/fwh/hp/iwn.htm . Where possible, collection should be conducted during the least risk work windows identified. The exception is seasonal or ephemeral streams where sampling may not be possible during the prescribed window due to flow conditions.

Regions 3 and 8 (Thompson/Nicola and Okanagan)

- Please refer to information at: http://wlapwwwt.gov.bc.ca/sir/fwh/fsh/work_windows/index.html for the appropriate instream work windows.