



**ENGLISHMAN RIVER WATER SERVICE JOINT VENTURE
MEETING OF THE MANAGEMENT BOARD**

**THURSDAY, May 25, 2017
9:30am – 10:30am**

***City of Parksville Forum
100 Jensen Avenue***

A D D E N D U M

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	5. CORRESPONDENCE	
2-11	5.1	Island Health, re Water Supply System Construction Permit No. W-CN-2861, dated March 1, 2017.
12-13	5.2	Fisheries and Oceans Canada, re Implementation of Mitigation Measures, dated March 6, 2017.
14-17	5.3	Island Health, re Water Supply System Construction Permit No. W-CN-2920, dated March 20, 2017.
18-20	5.4	Ministry of Forests, Lands and Natural Resource Operations, re Change Approval for Work In and About the Englishman River, dated May 9, 2017.

Distribution: J. Stanhope, B. Rogers, M. Lefebvre, S. Powell, M. Squire, R. Alexander

For Information: P. Carlyle, D. Comis, J. Marsh, C. Midgley, W. Idema, G. St. Pierre, V. Figueira, L. Butterworth,

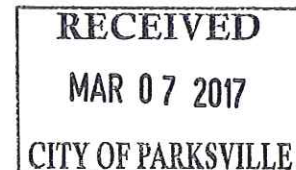
Excellent care, for everyone,
everywhere, every time



March 1, 2017

File: W-CN-Englishman River Water Service
Eng. File No.: 5600-15-WAT-VIHA

Mike Squire, P. Eng.
Program Manager
Englishman River Water Service
1116 Herring Gull Way
PO Box 1390
Parksville, BC V9P 2H3



Dear Mr. Squire:

**Re: Water Supply System Construction Permit No. W-CN-2861 – Englishman River
Water Treatment Plant**

Please find enclosed **Water Supply System Construction Permit No. W-CN-2861**, issued under Section 7 of the *Drinking Water Protection Act*, authorizing construction of Phase 1 of a proposed 16 ML/d Water Treatment Plant (WTP) consisting of a screened intake, intake pump station, sand separators, fine strainers, coagulant injection, four primary stage Toray HFU-2020N ultrafiltration membrane modules installed in parallel, one secondary stage Toray HFU-2020N ultrafiltration membrane module treating reject water from the primary membrane modules, two ultraviolet disinfection units installed in parallel, chlorine disinfection using liquid sodium hypochlorite, a chlorine contact tank, highlift pump station, clean-in-place membrane cleaning system, corrosion control using carbon dioxide, and other related appurtenances to treat and disinfect water from the Englishman River to serve existing and future development in the Nanoose Bay Peninsula Local Water Service Area of the Regional District of Nanaimo and in the City of Parksville, B. C.

This permit is issued to the Englishman River Water Service, a joint venture agreement between the City of Parksville and the Regional District of Nanaimo under the authority of the *Local Government Act* and the *Community Charter*.

This permit is valid until September 30, 2018 and is not transferable unless the transfer is approved by the Issuing Official or the Drinking Water Officer. This date corresponds to the City of Parksville's September 30, 2018 deadline contained in their Operating Permit. This permit is subject to the following terms:

Design Amendments and Conditions: The submitted design must be amended to address the following item(s), or during construction the following item(s) must be attended to, as a condition of this permit:

1. In consultation with, and as approved by, the local Environmental Health Officer, the water treatment plant owner shall prepare and submit a water quality monitoring program to the local

Environmental Health Officer, to assess the operation of the water treatment plant. The monitoring program should consist of a commissioning plan, a short term program to assess the commissioning of the water treatment plant (initial operation) and a long term program to monitor the ongoing operation of the water treatment plant.

2. The use of the polyaluminum chloride coagulant (CTI 4900 from ClearTEC Industries Inc.) shall not be dosed at a level greater than 250 mg/L as listed in NSF Standard 61. The level of aluminum in finished drinking water shall be monitored and not exceed 0.1 mg/L. Alternative coagulants can be used with the permission of Island Health.
3. Identification of the piping and storage tanks in the water treatment plant shall be completed to the satisfaction of the Environmental Health Officer. Colour coding and labelling shall be in accordance with the "Recommended Standards for Water Works", Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2012 edition, "Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems", Part 2, Province of Alberta, 2012 edition, or equivalent.
4. Shop drawings, make, model, specifications, certifications, validations, etc., of the ultraviolet disinfection units shall be provided to this office, and approval obtained in writing, prior to installation.
5. The reject water from the primary membrane shall be treated and disinfected to a higher degree of treatment and/or disinfection than the raw water of the Englishman River. This is due to the possibility of concentrating contaminants in the reject water. As this can be accomplished in a number of ways and has been previously discussed with ERWS and CH2M Hill, no approach will be discussed herein. ERWS shall submit a proposal to revise the design, and obtain approval in writing prior to implementation to address this issue. Please note, the Environmental Health Officer, designated as an Issuing Official for this area has selected rotavirus as the target virus when disinfecting water when using ultraviolet disinfection technology.

Design Clarifications or Corrections: In Section 13411 of the contract specifications it appears that pushbutton colours of "green" are used to show a function of "on" but light colours of "red" are to indicate functions of "on/running". Please clarify whether or not "on" and "on/running" should be of similar colours.

Design Deviations: This permit applies exclusively to the works as approved. Any subsequent design modifications will require the submission of amended drawings to the Issuing Official or Drinking Water Officer and approval obtained before installation of the amended works.

Disinfection: It is the responsibility of the water supply system owner (Englishman River Water Service) to ensure that, following the completion of construction, repair, or draining and refilling of any portion of the system affected, and prior to the delivery of water to customers served by these works, all waterworks affected by this permit are disinfected in accordance with the appropriate American Water Works Association (AWWA) standard or equivalent.

Chlorinated water used for disinfection of all waterworks shall not be directly discharged into the environment without the permission of the Ministry of Environment, and/or Fisheries and Oceans Canada.

Sewers: It is the responsibility of the water distribution system owner (Englishman River Water Service) to ensure that mains under construction or repair are not contaminated by seepage or effluent from sewers or storm drains.

Blending Dissimilar Waters: Downstream water users (City of Parksville and Regional District of Nanaimo) have existing groundwater sources. Blending a new treated surface water source with existing sources can affect water quality in the distribution system. For example, iron or manganese can precipitate when surface water with higher dissolved oxygen levels is blended with groundwater. Water supply system owners must be aware how a new source, or changes to a source will affect water quality in the distribution system.

Operating Permit: This permit does not constitute permission to operate the water treatment plant. Permission to operate the water treatment plant is given in the form of an Operating Permit, or an amendment to the existing Operating Permit for this water system, issued under Section 8 of the *Drinking Water Protection Act*. The water treatment plant and water system must be operated and maintained in accordance with its Operating Permit. The water supply system owner may need to obtain a new, or reaffirm the existing, Operating Permit for this water system.

An Environmental Health Officer, designated as an Issuing Official, may place additional conditions on your Operating Permit (for example, performance standards, monitoring requirements, reporting requirements, operation and maintenance plans, emergency response plans, etc.) with respect to the installation of these works.

Treatment and Disinfection Effectiveness and Future Treatment Requirements: Although the proposed treatment and disinfection facility is expected to produce potable water, issuance of this construction permit does not guarantee, warranty, nor imply the effectiveness of the proposed treatment scheme. The successful operation of the proposed treatment and disinfection systems will be based on actual operating data once the system is operating. Based on the operation and monitoring of the water treatment plant, the treatment and disinfection facilities may have to be altered or amended to produce acceptable water quality.

WTP Commissioning: During commissioning it may be necessary for the WTP to be in operation without delivering water into the distribution system until quality testing can demonstrate potable water. This may necessitate, but is not necessarily limited to, discharging large volumes of water to waste or other locations, intermittent operation of the WTP, phased operation, temporary facilities, discharge permits, laboratory services, lag times, review times, etc.

Future Construction: Future equipment installation, other alterations or expansion of this water treatment plant may require additional construction permits prior to installation

Security at Intake and Intake Pump Station: Human access and vandalism, if any, shall be monitored. Additional security may be required at the intake and the lower intake pump station as determined by the local Environmental Health Officer.

Notifications: It is a condition of this permit that the local Environmental Health Officer is:

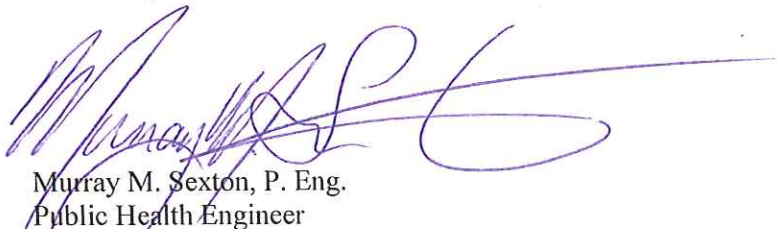
- a) notified upon completion of the permitted work;
- b) contacted to obtain a new, or reaffirm the existing, or amend the existing Operating Permit an amendment to your Operating Permit, or to reaffirm the existing, or amend the existing Operating Permit for the City of Parksville and/or Regional District of Nanaimo;
- c) contacted to establish a commissioning plan and monitoring program;
- d) contacted to inspect the water treatment plant; and,
- e) supplied with the results of all bacteriological testing conducted as part of the disinfection protocols.

Please contact Bill Wrathall, Environmental Health Officer, Island Health, Oceanside Health Centre, 489 Alberni Highway, Parksville, B. C., V9P 1J9, at telephone 250.947.8222, facsimile 250.951.9576 with the above notifications.

This document grants authorization under Section 7 of the *Drinking Water Protection Act* only, and does not constitute permission or consent under any other Act or authority.

Please contact the Public Health Engineering Department through Island Health in Nanaimo, should there be any questions concerning the above.

Yours truly,



Murray M. Sexton, P. Eng.
Public Health Engineer

e.c.: Dr. P. Hasselback, MD MSc FRCPC, Medical Health Officer, Central Island, Island Health, Nanaimo
Cole Diplock, Leader Operations Support, Island Health, Nanaimo
Lynne Magee, Water Specialist, Island Health, Nanaimo
Shaun Malakoe, Senior Environmental Health Officer, Island Health, Nanaimo
Bill Wrathall, Environmental Health Officer, Island Health, Parksville (enc.)
Vaughn Figueira, P. Eng., Director of Engineering, City of Parkville
Randy Alexander, P. Eng, General Manager, Regional and Community Utilities Engineering, RDN, Nanaimo
Kenneth Moore, P.Eng, CH2M Hill, Burnaby
Jesus Garcia-Aleman, CH2M Hill, Toronto

Enclosure

MS/jd

W-CN, Englishman River Water Service

Water Supply System Construction Permit

NO. W-CN-2861

To: **Englishman River Water Service**

Englishman River Water Treatment Plant


This is to certify that a draft predesign report entitled “Water Intake, Treatment Plant and Supply Mains”, dated and prepared December 10, 2015, and submitted January 26, 2016, drawings listed in the attached Schedule A and supporting documentation entitled “Englishman River Water Service Contract 1: Intake, WTP, and Top Bridge Reservoir Transmission Main”, dated August 2016, submitted August 25, 2016 by Kenneth Moore, P.Eng., of CH2M Hill Canada Limited, and drawings listed in the attached Schedule B and supporting documentation entitled, “Technical Memo – ERWS UF Membrane Proof Pilot Synopsis”, dated January 3, 2017, prepared by Bill Legge, P. Eng., of H2O Innovation, “Chemical List – Englishman River WTP”, undated, “Englishman River Water Service Contract 1: Intake, WTP, and Top Bridge Reservoir Transmission Main”, dated February 2017, prepared by R.A.C. Sinnott, P. Eng., G.M. Fulton, P. Eng., S.W.M. Mak, P. Eng., F. Absi, P. Eng., R. Natarajan, P. Eng., and T. Tran, P. Eng., all of CH2M Hill Canada Limited, and a draft predesign report (update) entitled “Water Intake, Treatment Plant and Supply Mains”, dated February 2, 2017, prepared by CH2M Hill and submitted February 14, 2017 by Jesus Garcia-Aleman of CH2M Hill Limited, portraying a proposed 16 ML/day water treatment plant consisting of a screened intake, intake pump station, sand separators, fine strainers, coagulant injection, four primary stage Toray HFU-2020N ultrafiltration membrane modules installed in parallel, one secondary stage Toray HFU-2020N ultrafiltration membrane module treating reject water from the primary membrane modules, two ultraviolet disinfection units installed in parallel, chlorine disinfection using liquid sodium hypochlorite, a chlorine contact tank, highlift pump station, clean-in-place membrane cleaning system, corrosion control using carbon dioxide, and other related appurtenances to treat and disinfect water from the Englishman River *and other related appurtenances* to serve existing and future development in the Nanoose Bay Peninsula Local Water Service Area of the Regional District of Nanaimo and in the City of Parksville, B. C., and submitted in accordance with Section 7 of the **Drinking Water Protection Act** have been reviewed and proposed construction, alteration or extension may be commenced in accordance with the approved plans and the terms and conditions contained in the letter of transmittal.

This document certifies that the plans and specifications for the proposed works have been reviewed pursuant to the current “Guidelines for the Approval of Water Supply Systems” issued by the Island Health and that the plans and specifications meet the protection requirements outlined in the Guidelines.

*The standards of structural integrity, fire protection, electrical and safety of the works have not been considered and are not the subject of this Permit. This document grants authorization under Section 7 of the **Drinking Water Protection Act** only, and does not constitute permission or consent under any other Act or authority.*

MAR 01 2017

Date Issued



Murray M. Sexton, P. Eng.
Public Health Engineer

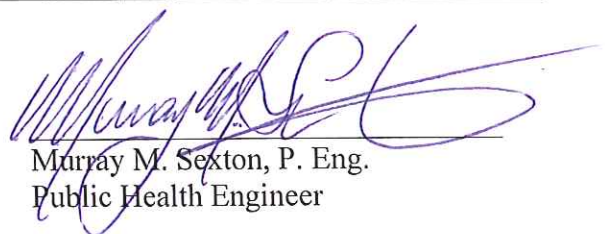


WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2861 – Englishman River Water Service
(Intake, Treatment Plant and Supply Mains)
Schedule A

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
05-C-200	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-201	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
05-C-202	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
05-C-203	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
05-C-204	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
05-C-205	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
05-C-208	0	August 2016	R.A.C. Sinnott, P.Eng	August 17, 2016	CH2M Hill
05-C-209	0	August 2016	R.A.C. Sinnott, P.Eng	August 17, 2016	CH2M Hill
05-C-213	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-214	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-215	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-216	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-217	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-301	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-302	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-304	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-305	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-307	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-400	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-401	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-402	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-404	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-405	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-406	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-500	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-501	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
05-C-502	0	August 2016	R.A.C. Sinnott, P.Eng	August 17, 2016	CH2M Hill
05-C-510	0	August 2016	G.M.Fulton, P.Eng	August 17, 2016	CH2M Hill
99-C-001	A	August 2016	J.C.P.Cheng, P.Eng	August 22, 2016	CH2M Hill
01-S-001	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
10-S-201	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-303	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-304	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-305	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-306	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-307	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill

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Murray M. Sexton, P. Eng.
Public Health Engineer

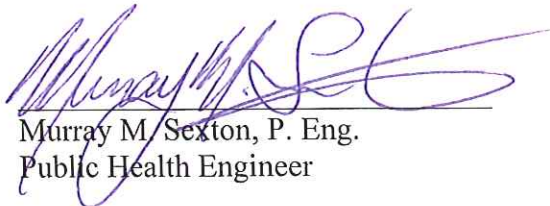


WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2861 – Englishman River Water Service
(Intake, Treatment Plant and Supply Mains)
Schedule A

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
20-S-308	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-309	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-201	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-202	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-203	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-301	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-302	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-406	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-408	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
20-S-409	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
99-S-501	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
99-S-502	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
99-S-504	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
99-S-505	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
99-S-510	A	August 2016	S.W.M. Mak, P.Eng	August 22, 2016	CH2M Hill
01-P-001	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-P-001	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-P-201	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-P-301	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
99-P-501	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
99-P-502	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
99-P-503	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
01-M-001	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
10-M-001	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
10-M-201	A	July, 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-001	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-002	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-003	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-201	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-202	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
20-M-301	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
99-F-503	A	August 2016	T.Tran, P.Eng	August 22, 2016	CH2M Hill
01-E-001	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
01-E-002	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill

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Murray M. Sexton, P. Eng.
Public Health Engineer



WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2861 – Englishman River Water Service
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Schedule A

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
01-E-003	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
01-E-004	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-E-001	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-E-002	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-E-011	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-E-012	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-EL-204	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-EP-201	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
10-EP-202	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-001	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-002	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-003	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-004	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-006	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-007	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-008	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-011	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-012	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-013	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-014	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-E-015	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
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20-EL-201	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-EL-205	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill
20-EP-201	A	August 2016	W.D.Thiessen, P.Eng	August 22, 2016	CH2M Hill

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Murray M. Sexton, P. Eng.
Public Health Engineer

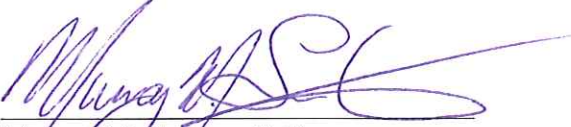


WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2861 – Englishman River Water Service
(Intake, Treatment Plant and Supply Mains)
Schedule B

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
01-G-002	0	October 2016	U. Alfaruq		CH2M Hill
01-G-003	0	October 2016	U. Alfaruq		CH2M Hill
01-G-004	0	October 2016	U. Alfaruq		CH2M Hill
01-G-005	0	October 2016	U. Alfaruq		CH2M Hill
01-G-006	0	October 2016	U. Alfaruq		CH2M Hill
01-D-001	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-D-002	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-D-003	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-D-201	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-D-202	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-D-301	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-201	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-202	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-203	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-204	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-205	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-206	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-207	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-301	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-302	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-303	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-304	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-401	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-402	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-403	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-404	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-501	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-502	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
20-D-503	0	October 2016	F. Absi, P. Eng.	October 17, 2016	CH2M Hill
01-N-001	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
01-N-002	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
01-N-003	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
10-N-001	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-001	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-010	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-011	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-012	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill

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 Murray M. Sexton, P. Eng.
 Public Health Engineer




WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2861 – Englishman River Water Service
(Intake, Treatment Plant and Supply Mains)
Schedule B

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
20-N-013	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-015	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-016	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-017	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-018	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-019	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-021	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-030	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-031	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-032	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-033	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-034	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-035	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-036	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-037	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-038	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-039	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-040	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
20-N-041	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
99-N-001	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
99-N-002	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill
99-N-003	0	October 2016	R. Natarajan, P. Eng.	October 17, 2016	CH2M Hill

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Page 2 of 2


Murray M. Sexton, P. Eng.
Public Health Engineer



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Pacific Region
200-401 Burrard Street
Vancouver, BC
V6C 3S4

Région du Pacifique
Pièce 200 – 401 rue Burrard
Vancouver, (C.-B.)
V6C 3S4

March 6, 2017

Your file *Votre référence*

Our file *Notre référence*
16-HPAC-01376

Mike Squire
Englishman River Water Service
1116 Herring Guy Way
Parksville, BC, V9P 1R2

Dear Mr. Squire:

Subject: Implementation of mitigation measures to avoid and mitigate serious harm to fish.

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on December 30, 2016.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Our review consisted of:

- Request for Review dated December 2016;
- Technical Memorandum dated December 2016; and
- Response Letter to DFO dated February 2017.

We understand that you propose to construct a water supply pipeline to cross over Shelly Creek. Works will include:

- Extension of the existing 2 culverts;
- Realignment of the stream into the existing overflow side channel;
- Construction of a floodplain bench in the existing main stem channel;
- Creation of a fall pool at the culvert outlets;
- Construction of a lock block retaining wall and installation of riprap; and
- Conducting riparian vegetation removal.

Provided that the mitigation measures outlined in the above plans are incorporated into your project, the Program is of the view that your proposal will not result in serious harm to fish. No formal approval is required from the Program under the *Fisheries Act* in order to proceed with your proposal.

If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please notify this office at least 10 days before starting your project. A copy of this letter should be kept on site while the work is in progress.

If you have any questions, please contact Larissa Chin at our Vancouver office at 604-666-7066, or by email at Larissa.Chin@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

A handwritten signature in black ink that reads "B Rotinsky". The signature is written in a cursive style with a large, stylized initial "B".

Brenda Rotinsky
Team Leader
Fisheries Protection Program

Excellent health and care for everyone,
everywhere, every time.



March 20, 2017

File: W-CN-Parksville, City of

Mike Squire, P.Eng
Director of Operations
Public Works and Operations
City of Parksville
PO Box 1390
Parksville, BC V9P 2H3

Dear Mr. Squire:

**Re: Water Supply System Construction Permit No. W-CN-2920 – Springwood Reservoir
Transmission Main**

Please find enclosed **Water Supply System Construction Permit No. W-CN-2920**, issued under Section 7 of the *Drinking Water Protection Act*, authorizing construction of a proposed watermain extension from the east side of Englishman River to Springwood Reservoir to serve existing and future development in the City of Parksville, BC.

This permit is valid for one year and is not transferable unless the transfer is approved by the Issuing Official or the Drinking Water Officer. This permit is subject to the following terms:

Design Amendments and Conditions: The submitted design must be amended to address the following item(s), or during construction the following item(s) must be attended to, as a condition of this permit:

1. For the underwater crossing of the Englishman River, valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding. Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source shall be provided.

Design Deviations: This permit applies exclusively to the works as approved. Any subsequent design modifications will require the submission of amended drawings to the Issuing Official or Drinking Water Officer and approval obtained before installation of the amended works.

Disinfection: It is the responsibility of the water distribution system owner (City of Parksville) to ensure that, following the completion of construction, repair, or draining and refilling of any portion of the system affected, and prior to the delivery of water to customers served by these works, all waterworks affected by this permit are disinfected in accordance with the appropriate American Water Works Association (AWWA) standard or equivalent.

Chlorinated water used for disinfection of all waterworks shall not be directly discharged into the environment without the permission of the Ministry of Environment, and/or Fisheries and Oceans Canada.

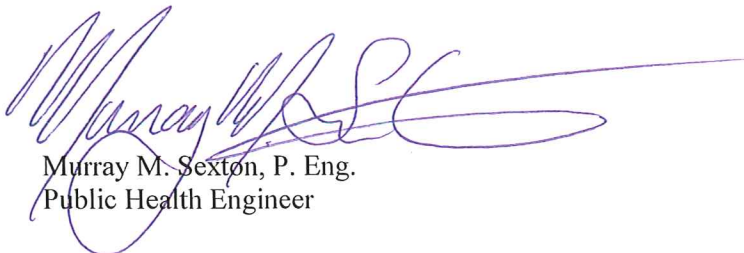
The water supplier (City of Parksville) shall maintain records of the completion date of the permitted work, and the results of the bacteriological testing conducted as part of the disinfection protocol. The water supplier shall notify Island Health if bacteriological tests are unacceptable. These records shall be made available for inspection by the public health engineer or Island Health personnel, if requested.

Sewers: It is the responsibility of the water distribution system owner (City of Parksville) to ensure that mains under construction or repair are not contaminated by seepage or effluent from sewers or storm drains.

This document grants authorization under Section 7 of the *Drinking Water Protection Act* only, and does not constitute permission or consent under any other Act or authority.

Please contact the Public Health Engineering Department through Island Health in Nanaimo, should there be any questions concerning the above.

Yours truly,



Murray M. Sexton, P. Eng.
Public Health Engineer

e.c.: Bill Wrathall, Environmental Health Officer, Island Health, Parksville
G. M Fulton, P. Eng., Kerr Wood Leidal, Burnaby
Eric Morris, P. Eng., Kerr Wood Leidal, Victoria

Enclosure

MS/jd

W-CN, Parksville, City of

Water Supply System Construction Permit

NO. W-CN-2920

To: City of Parksville

Springwood Reservoir Transmission Main

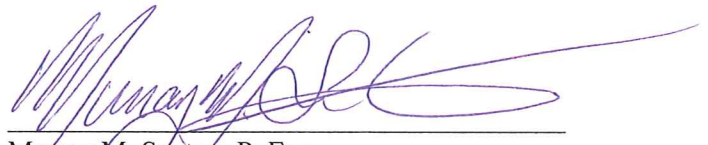
This is to certify that drawings listed in the attached Schedule A portraying a proposed watermain extension comprising of *approximately 4640 metres of 600-mm diameter HDPE pipe with pressure classes of 200, 160 and 125, 30 metres of total length of 600-mm, 500-mm and 400-mm diameter PC160 HDPE pipe, 25 metres of 400-mm diameter PC250 ductile iron pipe and other related appurtenances* to serve existing and future development in the City of Parksville, B. C., and submitted in accordance with Section 7 of the **Drinking Water Protection Act** have been reviewed and proposed construction, alteration or extension may be commenced in accordance with the approved plans and the terms and conditions contained in the letter of transmittal.

This document certifies that the plans and specifications for the proposed works have been reviewed pursuant to the current "Guidelines for the Approval of Water Supply Systems" issued by the Island Health and that the plans and specifications meet the protection requirements outlined in the Guidelines.

*The standards of structural integrity, fire protection, electrical and safety of the works have not been considered and are not the subject of this Permit. This document grants authorization under Section 7 of the **Drinking Water Protection Act** only, and does not constitute permission or consent under any other Act or authority.*

MAR 20 2017

Date Issued



Murray M. Sexton, P. Eng.
Public Health Engineer

e.c.: Bill Wrathall, Environmental Health Officer, Island Health, Parksville
G. M. Fulton, P. Eng., Kerr Wood Leidal, Burnaby
Eric Morris, P. Eng., Kerr Wood Leidal, Victoria

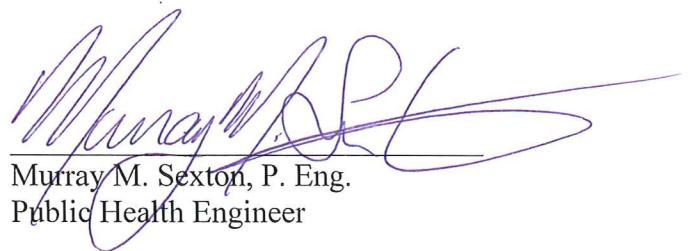


WATER SUPPLY SYSTEM CONSTRUCTION PERMIT
No. W-CN-2920
Springwood Reservoir Transmission Main
Schedule A

Drawing No	Rev. No.	Dated	Prepared by	Prepared on	Company
06-C-001	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-201	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-202	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-203	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-204	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-205	A	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-206	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-207	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-208	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-209	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-210	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-211	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-212	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-213	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-214	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-215	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-401	0	February 2017	E.R. Morris, P.Eng.	February 24, 2017	Kerr Wood Leidal
06-C-402	0	February 2017	E.R. Morris, P.Eng.	February 24, 2017	Kerr Wood Leidal
06-C-403	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-404	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal
06-C-405	0	February 2017	E.R. Morris, P.Eng.	February 24, 2017	Kerr Wood Leidal
06-C-406	0	February 2017	R.A.Rutherford, P.Eng.	February 24, 2017	Kerr Wood Leidal
06-C-502	0	February 2017	G.M. Fulton, P.Eng.	February 27, 2017	Kerr Wood Leidal

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Date Issued
Page 1 of 1



Murray M. Sexton, P. Eng.
Public Health Engineer



May 9, 2017

File: 76910-20/1003668

Mike Squire
Englishman River Water Service
1116 Herring Gull Way
Parksville BC V9P 1R2

Email: msquire@parksville.ca

Dear Mike Squire:

Re: Change Approval under Section 11 (2) (a), *Water Sustainability Act*, for Work In and About the Englishman River

Approval under Section 11 of the *Water Sustainability Act* for changes in and about a stream (Englishman River) is hereby granted. The approval document is enclosed. Please make careful note of all its conditions.

Please note that this Approval, under Section 11 of the *Water Sustainability Act*, does not include fish habitat concerns and issues under the *Federal Fisheries Act*. A separate authorization process may be required under the *Federal Fisheries Act*.

An appeal to this order may be taken only as directed within Section 105 of the *Water Sustainability Act*. Notice of any appeal must: (1) be in writing; (2) be delivered within 30 days of the date of this letter; (3) include grounds for the appeal; (4) be accompanied by a fee of \$25.00 (cheque or money order payable to Minister of Finance); and (5) be sent by registered mail to the Chair, Environmental Appeal Board, PO Box 9425, Stn Prov Govt, Victoria BC V8W 9V1; or personally delivered to the office of the Board on the 4th Floor, 747 Fort Street, Victoria BC V8W 3E9.

If you have any questions or concerns regarding the document issued, please do not hesitate to contact Mary Toews, Water Officer/ Habitat Biologist at mary.toews@gov.bc.ca or 250 731-3041.

Yours truly,


Digitally signed by Rhonda (Morris) Coleman
DN: cn=Rhonda (Morris) Coleman, o=Ministry of Forests, Lands and Natural Resources, ou=South Island Natural Resource District,
email=Rhmorris@gov.bc.ca, c=CA
Date: 2017.05.09 12:36:26 -07'00'

Rhonda Morris
Assistant Water Manager

Enclosure: Approval Document

APPROVAL
CHANGES IN AND ABOUT A STREAM
Section 11 (2), Clause (a)

This approval grants authority under Section 11 of the *Water Sustainability Act* only, and does not constitute permission or consent under any other Act or authority.

Englishman River Water Services (and agents Chad Davey and Patrick Lilley, Kerr Wood Leidal Associates Ltd.) is hereby authorized to make the following changes in and about Englishman River at a location best described as 100m downstream of the Hwy 19 bridge crossing: E&N Railway Right-of-Way Block 1494, Plan VIP64444, Lot 1 (49.3011000, -124.2756000).

Changes proposed:

The works proposed include installation of a water main crossing (through trenching and/or blasting) under the Englishman River. This is for the purpose of an expanded water intake capacity for Parksville/Qualicum, part of a larger project (treatment plant, intake and distribution system). Works will be completed in stages, dewatering each side of the channel temporarily with coffer dams. Total project area is 2,500 m²; including 1300 m² of aquatic habitat and 900 m² of riparian habitat. Aquatic habitat should be 100% restored, riparian habitat 90% restored (need maintenance route).

APPROVAL CONDITIONS AND SPECIFICATIONS

1. The work authorized under this Approval shall be completed on or before September 15, 2017.
2. In-stream work shall be undertaken only during the period of June 15th to September 15th. Any work in the stream outside this period is to be confirmed with the Regional Ecosystems Biologist, Ministry of Forests, Lands and Natural Resource Operations (FLNRO) and Fisheries and Oceans Canada office.
3. All works are to be constructed in accordance with the environmental mitigation measures described in "Environmental Impact Assessment for Water Main Crossing of Englishman River" prepared by Kerr Wood Leidal Associates Limited (November 4, 2016).
4. The applicant must ensure that a suitably qualified environmental monitor is on site during all instream work and construction activities. This environmental monitor must have the ability to stop works if needed and provide direction/recommendations at all stages.
5. Complete all instream work in isolation of flowing water. Aquatic fauna salvage will be required during dewatering of the work site; this first requires applying for and receiving a Fish Scientific Collection Permit. Flow downstream of the work site must always be maintained so that there is no dewatering of downstream fish habitat.
6. Machinery shall be in good mechanical condition such that there is no leakage of substances, deleterious to fish, into the stream. Where possible, machinery should use biodegradable fuel.
7. The Water Sustainability Regulation requires that the pipeline and associated works are installed in a dry stream channel at a depth so that the top of the pipe is at least 1 m below the lowest elevation of the bed of the stream.
8. This Approval does not relieve the approval holder of the requirement to comply with any other applicable Federal, Provincial, Regional District or Municipal enactment. The applicant may need to obtain a permit from the Ministry of Transportation and Infrastructure for any works or staging area within Ministry right of way. The applicant may need to ensure there is no conflict with the City of Parksville project nearby (File # 2016-03358). Any trail closure required should be discussed with the City of Parksville.

9. Permission for access through private or public lands must be obtained by the approval holder prior to commencement of the work. No right of expropriation exists under an approval.
10. Every holder of an approval, or person who makes a change in and about a stream in accordance with the regulations, shall exercise reasonable care to avoid damaging land, works, trees, or other property; and shall make full compensation to the owners for damage or loss resulting from construction, maintenance, use, operation, or failure of the works.
11. A change in and about a stream must be designed, constructed, and maintained in such a manner that the change does not pose a significant danger to life, property, or the environment. Design coffer dams as per qualified engineering professional recommendations and to avoid harm to fish or fish habitat (e.g. avoid erosion to banks). Use appropriate containment methods to ensure no uncured concrete enters the stream.
12. Complete monitoring before, during and after works and conduct the proposed riparian restoration and bank stability/riparian vegetation restoration program described in "Environmental Impact Assessment for Water Main Crossing of Englishman River" prepared by Kerr Wood Leidal Associates Limited (November 4, 2016). With landowner permission, the applicant could consider creating snags and perch/nesting habitat to replace removed trees and/or compensation plantings for the 10% riparian area that cannot be restored.
13. The post-construction streambed should be as similar as possible to pre-work conditions, so as to not have a significant impact on stream morphology, hydrology and flow.
14. The applicant must, while making the change in and about the stream:
 - (a) maintain water quality;
 - (b) maintain stream channel integrity;
 - (c) maintain surface and sub-surface drainage systems and flows;
 - (d) conserve wildlife habitat, including riparian vegetation;
 - (e) protect fish habitat and fish passage;
 - (f) prevent erosion, mass wasting, siltation; and
 - (g) prevent degradation to water quality at the intake of existing water supplies authorized under the *Water Sustainability Act*.

Digitally signed by Rhonda (Morris)
Coleman
DN: cn=Rhonda (Morris) Coleman,
ou=Ministry of Forests, Lands,
and Natural Resource Operations,
ou=Natural Resource District,
email=Rhonda@pawbcca.ca, c=CA
Date: 2017.05.09 12:36:15 -0700

Rhonda Morris
Assistant Water Manager



Issued Date: May 9, 2017 Approval No.: 1003668

District: South Island Precinct: Nanaimo/Parksville