



COLUMBIA SHUSWAP REGIONAL DISTRICT

555 Harbourfront Drive NE, PO Box 978, Salmon Arm, BC V1E 4P1
T: 250.832.8194 | F: 250.832.3375 | TF: 1.888.248.2773 | www.csr.bc.ca

April 16, 2020

DP725-233
PL202000024

Michael Hughes
3304 Gray Road
Blind Bay, BC V0E 1H1

Email: mrmikehughes84@gmail.com

Re: Notice of Permit
Development Permit No. DP725-233
Lot 4 Section 20 Township 22 Range 10 West of the 6th Meridian Kamloops Division
Yale District Plan 9999 (PID: 008-587-639)

Enclosed is a duly executed copy of the above noted Riparian Areas Regulation and Lakes 100 m Development Permit as registered at the Land Title Office, Registration No. CA8129004.

Please be advised that this Riparian Areas Regulation and Lakes 100m Development Permit is subject to: the permit as registered, the Electoral Area C Official Community Plan Bylaw No. 725, South Shuswap Zoning Bylaw No. 701, and the Building Regulation Bylaw No. 660 as they apply to your property. Consolidated versions of Bylaw Nos. 725, 701, and 660 can be viewed on the CSR website at www.csr.bc.ca.

Be advised that professional reports have specific recommendations for development that must be adhered to. Should development not be completed per the report's recommendations, you may be in contravention of your Development Permit. Ensure that you read through the professional report attached to your permit and should you have any questions, contact the qualified professional.

If you have any questions or concerns, please contact the undersigned at the above address.

Sincerely,

Hayley Graham
Planner I

Encl.

Cc: Launch Construction
By Email

ELECTORAL AREAS

A GOLDEN-COLUMBIA
B REVELSTOKE-COLUMBIA

C SOUTH SHUSWAP
D FALKLAND-SALMON VALLEY

E SICAMOUS-MALAKWA
F NORTH SHUSWAP-SEYMOUR ARM

MUNICIPALITIES

GOLDEN
REVELSTOKE

SALMON ARM
SICAMOUS



DEVELOPMENT PERMIT NO. 725-233

OWNERS: Michael Hughes
3304 Gray Road
Blind Bay, BC
VOE 1H1

1. This Lakes 100 m and Riparian Areas Regulation Development Permit is issued subject to compliance with all the Bylaws of the Regional District applicable thereto, except as specifically varied or supplemented by this Permit.
2. This Permit applies only to the lands described below:

Lot 4 Section 30 Township 22 Range 10 West of the 6th Meridian Kamloops Division Yale District Plan 9999(PID: 008-587-639), which property is more particularly shown outlined in bold on the Location Map attached hereto as Schedule A.
3. This Permit is issued pursuant to Section 12.3 and 12.4 of the "Electoral Area C Official Community Plan Bylaw No. 725, as amended," for an interior and exterior addition to the single family dwelling and attached deck as more particularly shown on the Site Plan attached hereto as Schedule B.
4. An amendment to the Permit will be required if development is not in substantial compliance with this Permit.
5. This Permit is issued based on the Hydrogeologist Assessment submitted by Watterson Geoscience, dated January 29, 2019, which contains recommendations and/or conditions regarding site development, and which form conditions to the issuance of this permit, attached hereto as Schedule C, which satisfies the requirements of the Lakes 100 m Development Permit Area as set out in Section 12.3 of the Electoral Area C Official Community Plan Bylaw No. 725.
6. This Permit is issued based on the Riparian Areas Regulation Assessment submitted by Jeremy Ayotte, R.P.Bio, dated January 14, 2020, which contains recommendations and/or conditions regarding site development, and which form conditions to the issuance of this permit, attached hereto as Schedule D, which satisfies the

requirements of the Riparian Areas Regulation Development Permit Area as set out in Section 12.4 of the Electoral Area C Official Community Plan Bylaw No. 725.

7. It is understood and agreed that the Regional District has made no representation, covenants, warranties, guarantees, promises or agreement (verbal or otherwise) with the developers other than those in the permit.
8. This Permit shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.
9. This Permit is NOT a building permit.

AUTHORIZED AND ISSUED BY the Manager of Development Services of the Columbia Shuswap Regional District on the 7 day of APRIL, 2020.

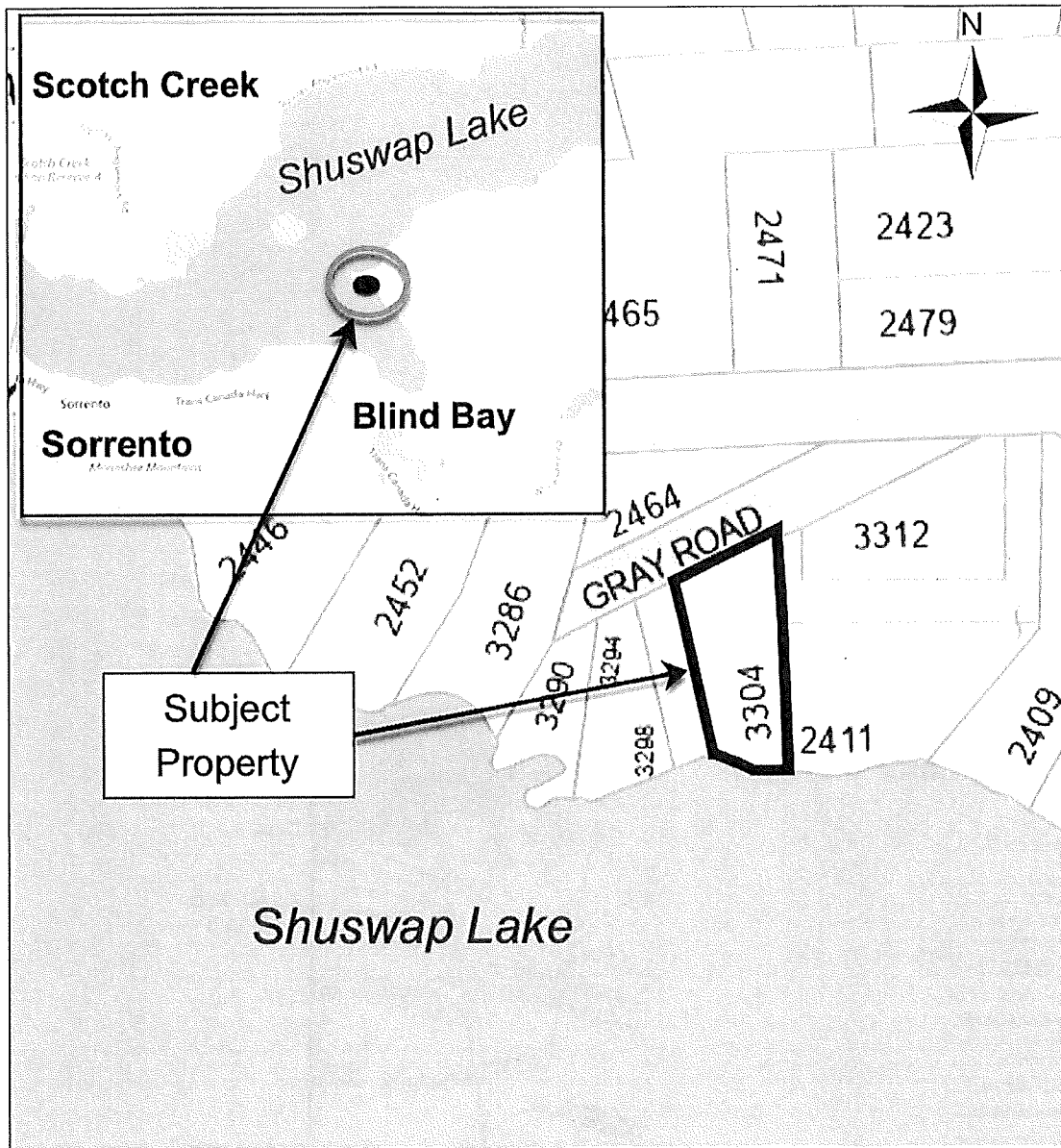


Gerald Christie
Manager, Development Services

PLEASE NOTE:

- 1) Pursuant to Section 504 of the *Local Government Act*, if the development of the subject property authorized by this permit is not substantially commenced within two years after the issuance of this permit, the permit automatically lapses.
- 2) This Permit addresses Local Government regulations only. Further permits or authorizations may be required from Provincial and Federal governments. It is the owner's responsibility to call Front Counter BC at 1-877-855-3222 regarding this project.

Schedule A
Location Map



Schedule C

Hydrogeologist Assessment

WGI Project 20-022
 CSRD DPA Hydrogeological Evaluation – 3304 Gray Rd Property

January 29, 2019

Mr. Brad Long
 Launch Construction Ltd.
 2154 Eagle Bay Road
 Blind Bay, BC V0E 1H1

Via email: launchltd@telus.net

Re: CSRD DPA Hydrogeology Assessment – Residence Renovation and Deck Extension at 3304 Gray Road, Blind Bay, BC

Dear Mr. Long:

Watterson Geoscience Inc. (WGI) is pleased to provide this hydrogeological assessment of the above-referenced property as required by the Columbia-Shuswap Regional District (CSRD). Watterson Geoscience Inc. (WGI) understands that the residence and deck footprint will be expanded at the above-referenced property, which is situated on the south shore of Shuswap Lake in the community of Blind Bay, BC. The legal description of this property is Lot 4, Sec. 30, Twp. 22, R10, W6M, K.D.Y.D., PL 9999 (PID No. D: 008-587-639).

As the planned construction will be situated within 100 m of Shuswap Lake, the Columbia-Shuswap Regional District (CSRD) Area C Development Permit Area (DPA) Bylaw 725 Section 12.3 requires

- an assessment of site hydrogeological conditions including soil types, drainage characteristics, seepage zones, springs and seasonally saturated areas, groundwater depth, flow direction and pathways, and shallow bedrock;
- an evaluation of the suitability for site soils to accept stormwater runoff,
- identification of potential impacts on nearby surface water bodies (Shuswap Lake); and
- recommendations and mitigative measures.

This work must be completed by a Qualified Professional with experience in Hydrogeology. The intent of this report is to address Bylaw 725 requirements.

PROPOSED CONSTRUCTION AND PROPERTY CHARACTERISTICS

Based on information provided by you, WGI understands the following:

- The property is currently developed with an approximately 1,150 sq. ft residence, deck, pool, and pool house.
- Approximately 40 sq. ft. of living space will be added to the existing residence's main floor, and the existing deck will be extended southward with a roof constructed over the deck (Figure 1).

- The newly constructed deck supports will be situated approximately 30 m from the lake High Water Mark (HWM).
- The residence is served by a single onsite wastewater treatment and disposal system (OTDS) and obtains potable water from the lake.

A site visit was conducted by WGI on November 21, 2019. The property is developed with a residence, paved driveway, deck, shed, in-ground swimming pool, pool house, hardscaping and some ornamental gardens throughout.

The property is terraced and slopes south towards Shuswap Lake. No evidence of groundwater seepage, standing water, runoff channels or hydrophilic vegetation was observed at any location on the property, nor was seepage observed on the beach area downslope immediately adjacent to Shuswap Lake, verifying deep depth to groundwater and reasonably good infiltration characteristics. Furthermore, a drainage ditch was observed immediately north of Gray Road, north and upslope of the property boundary. No seepage, signs of standing water, saturated soil or surface runoff erosion were observed in the ditch, suggesting reasonably good drainage characteristics in the area.

Bedrock underneath the Site is likely sedimentary and metamorphic rocks, including limestone, conglomerate, greenstone, skarn, micaceous and calcareous quartzite, and marble from the Mount Ida Assemblage (Massey et. al., 2005). Based on geological mapping completed by Robert Fulton (1969), overburden at and near Site is expected to be lacustrine silt, sand and gravel.

Online mapping available from the BC Ministry of Environment and Climate Change Strategy (ENV) Water Resources Atlas (WRA) suggests the Site is not underlain by a mapped aquifer. Aquifer No. 233 IIIB, the nearest mapped aquifer is located approximately 1.9 km southeast of the Site. This sand and gravel aquifer is classified as having low productivity and moderate vulnerability to surface sources of contamination. No quantity or quality concerns have been reported for this aquifer.

Shallow groundwater flow likely follows surface topography southwest towards the lake.

Except for Shuswap Lake, no watercourses or springs are mapped on or near the Site, nor were any observed in the area during the site reconnaissance.

The WRA shows several points of diversion with water licenses, including one for the property, are situated on Shuswap Lake near the property. The property's water intake, which is licensed to Ms. Tricia Leanne Feigel (License C111588), is situated 100 m south of the property, and was established for domestic purposes in 1970. The closest nearby license (C061193), situated 35 m southwest of the property shore, was established in 1983 for domestic use.

EFFECTS ON LAKE WATER QUALITY

Stormwater runoff, erosion prevention and sediment control during residence and deck renovations will be managed in accordance with Section 4 – Environmental Planning and Development at the Site Level in

the guidance document Environmental Best Management Practices for Urban and Rural Land Development (BC MWLAP, 2004).

Stormwater runoff from the residential addition and newly constructed deck roof will be captured using roof leaders, downspouts and PVC drainpipe, with eventual discharge to a splash pad adjacent to the swimming pool. As this runoff will originate solely from the building roof, this water will not be contaminated and no potential effects on underlying groundwater and downgradient Shuswap Lake water quality are expected from infiltration of this runoff. Residence and deck renovations are not expected to significantly increase runoff volume and should excess surface flow occur during a high precipitation event, property landscaping will capture and infiltrate any excess runoff.

Runoff from the existing paved driveway drains to surrounding landscaped areas and infiltrates directly to ground. Although stormwater runoff from driveways can include several types of potential contaminants, under normal property use the concentrations of these contaminants is expected to be very low. The most common potential contaminants, primarily consisting of metals, suspended solids, petroleum compounds and glycols (antifreeze), will bind to soil in the unsaturated zone and not migrate down into the underlying water table (Weiss, LeFevre and Gulliver, 2008). In addition, the lateral distance from the lake will allow for additional contaminant dispersion, adsorption and degradation. No impacts to lake quality are expected from infiltration of this stormwater runoff and the property improvements are not expected to increase runoff volume from the driveway.

No information regarding the OTDS design and location are available; however, property improvements are not expected affect OTDS operation and capacity. No obvious signs of poor septic effluent treatment or breakout, including odours, staining, or abnormally lush vegetation, were noted during WGI's site visit.

CONCLUSIONS

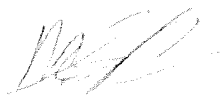
Therefore, although the proposed residence and deck renovations will be situated within the 100 m distance stipulated in CSRD Bylaw 725, it is my professional opinion that their construction will not negatively impact underlying groundwater and Shuswap Lake water quality.

Implementing rigorous and appropriate sediment and erosion control practices and procedures during construction, effectively capturing, managing, and infiltrating stormwater runoff, utilizing appropriate property landscaping along with effective residential stormwater management and disposal practices should minimize the potential for increased stormwater runoff into the lake and also minimize the potential for comprised local groundwater and downslope surface water quality from stormwater runoff.

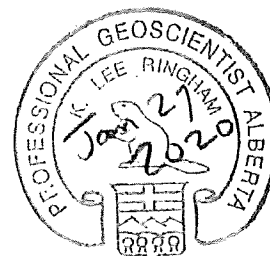
This assessment has been completed in accordance with generally accepted engineering and environmental practice. In preparing this analysis we have relied in good faith on information provided by others, the accuracy of which I cannot attest. Please note, no hydrogeological investigation can wholly eliminate uncertainty regarding the potential for unrecognized conditions in connection with an aquifer or subsurface materials.

Do not hesitate to contact the undersigned if you have any questions or wish to discuss any aspect of this report.

WATTERSON GEOSCIENCE INC.



Mike Schutten, M.A.Sc.
 Environmental Scientist
 Ecoscape Environmental Consultants Ltd.

Lee Ringham, M.Sc., P.Geo.
 Senior Hydrogeologist
 Chinook Arch Geoscience Inc.
 for Dan Watterson, P.Geo.
 Watterson Geoscience Inc.

References

BC Ministry of Air, Water and Land Protection. 2004. Section 4 – Environmental Planning and Development at the Site Level.

http://www.env.gov.bc.ca/wld/documents/bmp/urban_ebmp/EBMP%20PDF%203.pdf

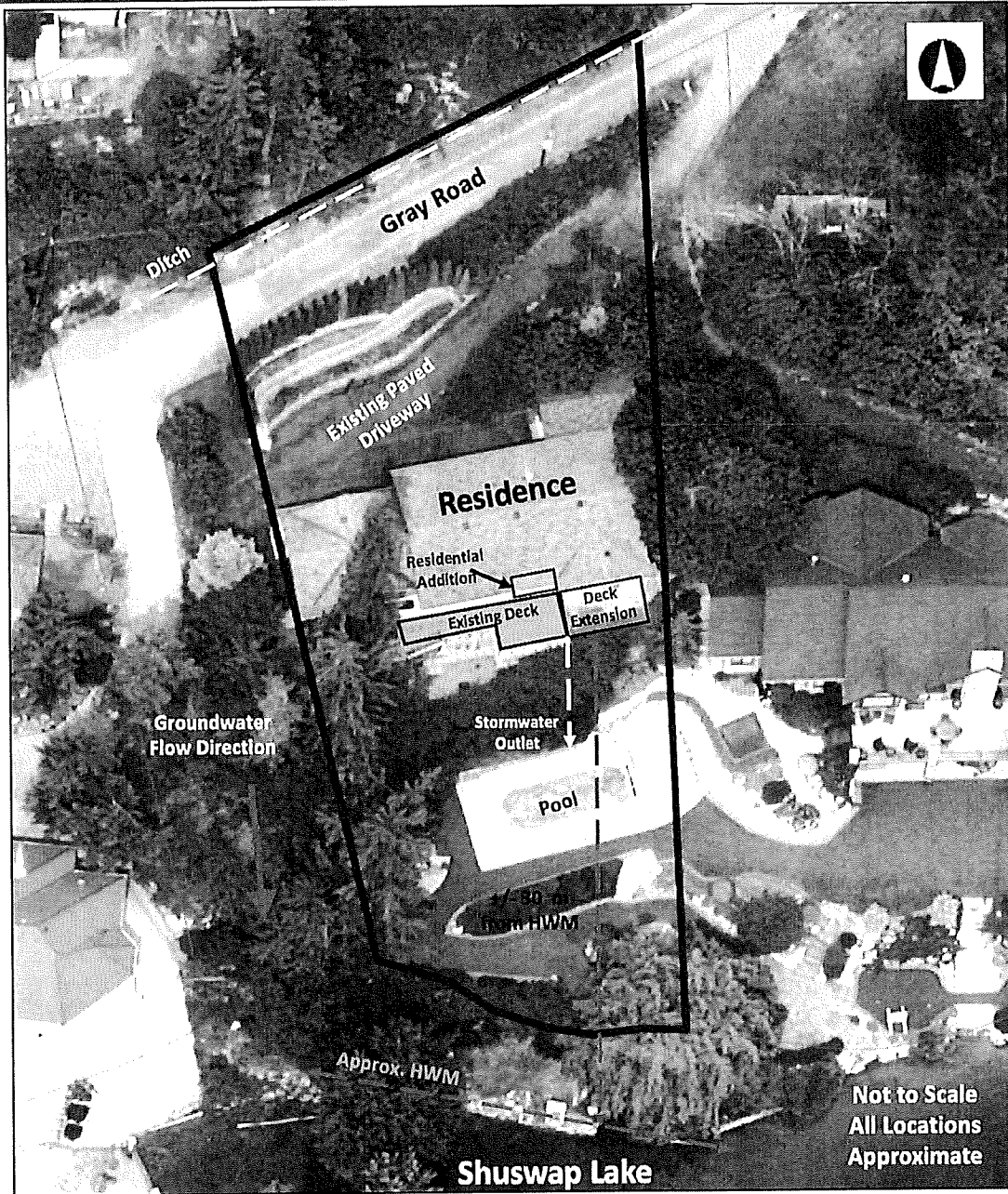
BC Ministry of Environment. Water Resources Atlas. 2019.

http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html

Fulton, R.J. 1969. Geological Survey of Canada Surficial geology, Shuswap Lake west of sixth meridian, British Columbia, scale 1:126,720

Massey, N.W.D., MacIntyre, D.G., Desjardis, P.J and Cooney, R.T. 2005. Geology of British Columbia: British Columbia Geological Survey, Geoscience Map 2005-3, scale 1:1,000,000

Weiss, P., G. LeFevre, and J. Gulliver. 2008. Contamination of Soil and Groundwater Due to Stormwater Infiltration Practices: A Literature Review. University of Minnesota, St. Anthony Falls Laboratory Project Report No.515.



Watterson Geoscience Inc. <small>Groundwater Consulting Services</small>	3304 Gray Road CSRD DPA Hydrogeological Assessment	Property Layout – Proposed Residential Addition and Deck Extension
		Project No. 20-022
Source: CSRD Online Maps	Client: Long	Figure 1

Schedule D

Riparian Areas Assessment

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Protection Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date January 14, 2020

I. Primary QEP Information

First Name	Jeremy		Middle Name	
Last Name	Ayotte			
Designation	RPBio		Company	Phyla Biological Consulting Inc
Registration #	1692		Email	Jeremy.ayotte@gmail.com
Address	168 Larch Hills			
City	Salmon Arm	Postal/Zip	V1E 2Y4	Phone # 250-804-3513
Prov/state	BC	Country	Canada	

II. Secondary QEP Information (use Form 2 for other QEPs)

First Name	Daniel		Middle Name	
Last Name	Watterson			
Designation	P. Geo		Company	
Registration #			Email	
Address	685 Pheasant Road			
City	Vernon	Postal/Zip	V1B 3B1	Phone # 250-550-8560
Prov/state	BC	Country		

III. Developer Information

First Name	Mike		Middle Name	
Last Name	Hughes			
Company				
Phone #	250-253-0263		Email	
Address	3304 Gray Road			
City	Blind Bay	Postal/Zip		
Prov/state	BC	Country	Canada	

IV. Development Information

Development Type	Construction – Single Family Residential		
Area of Development (ha)	0.01	Riparian Length (m)	33
Lot Area (ha)	0.15	Nature of Development	Renovation addition
Proposed Start Date	01-13-2020	Proposed End Date	03-01-2020

V. Location of Proposed Development

Street Address (or nearest town)	3304 Gray Road		
Local Government	Columbia Shuswap Regional District	City	
Stream Name	Shuswap Lake		
Legal Description (PID)	008-587-639	Region	3
Stream/River Type	Lake	DFO Area	Interior
Watershed Code	128		
Latitude	50	53	59
Longitude	119	22	48

Completion of Database Information includes the Form 2 for the Additional QEPs, if needed. Insert that form immediately after this page.

FORM 1
Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Table of Contents for Assessment Report

Page Number

1. Description of Fisheries Resources Values

2. Results of Riparian Assessment (SPEA width)

3. Site Plan

4. Measures to Protect and Maintain the SPEA
(detailed methodology only).

 1. Danger Trees.....

 2. Windthrow.....

 3. Slope Stability.....

 4. Protection of Trees.....

 5. Encroachment

 6. Sediment and Erosion Control.....

 7. Floodplain.....

 8. Stormwater Management.....

5. Environmental Monitoring

6. Photos

7. Assessment Report Professional Opinion

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

(Provide as a minimum: Species present, type of fish habitat present, description of current riparian vegetation condition, connectivity to downstream habitats, nature of development, specific activities proposed, timelines)

Fisheries Resource Values

Shuswap Lake is part of the Fraser River Basin and supports populations of Sockeye Salmon (*Oncorhynchus nerka*), Coho Salmon (*Oncorhynchus kisutch*), Chinook Salmon (*Oncorhynchus tshawytscha*), Kokanee (*Oncorhynchus nerka nerka*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*), Mountain Whitefish (*Prosopium williamsoni*), Rainbow Trout (*Oncorhynchus mykiss*), Longnose Sucker (*Catostomus catostomus*), and Burbot (*Lota lota*).

This peninsular area of Blind Bay on Shuswap Lake has a relatively steep terraced shoreline (30%+). The south facing shoreline on the subject property is comprised of a mix of developments (homes, driveways, swimming pool), ornamental landscaping, and native vegetation.

The condition and quality of the Shuswap Lake foreshore riparian vegetation on the subject property is moderate, with several large mature Douglas fir and Ponderosa Pine trees along with native shrubs remaining within the SPEA. Encouraging a thriving band of native vegetation along the shoreline and allowing decaying wood and leaf litter to remain on the forest floor along the shoreline bank will help maintain this lot as naturally functioning Shuswap Lake shoreline. Shoreline trees contribute important nutrients and shade to fish habitat in Shuswap Lake. Any development on this lot must protect existing vegetation within the 15 m SPEA and encourage vegetation enhancement wherever possible.

Development Proposal

This Riparian Areas Regulation assessment report was triggered by the proposal to construct a 33 m² covered deck attached to an existing single family home that is partially within the 30 m Riparian Assessment Area on Shuswap Lake. The Streamside Protection and Enhancement Area (SPEA) on this lot is the area within 15 m of the high water mark of Shuswap Lake (348.7 m elevation). There is a small pool house, retaining walls, and landscaping currently constructed within the 15 m SPEA.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 2. Results of Riparian Assessment (SPEA width)

Attach or insert the Form 3 or Form 4 assessment form(s). Use enough duplicates of the form to produce a complete riparian area assessment for the proposed development

Refer to Section 3 of Technical Manual

Date: January 13, 2020

Description of Water bodies involved (number, type)

Stream	
Wetland	
Lake	1
Ditch	
Number of reaches	1
Reach #	1

Shuswap Lake

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

Channel Width(m)		Gradient (%)	
starting point			I, <u>Jeremy Ayotte</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.
upstream			
downstream			
Total: minus high /low mean	NA	NA	
	R/P	C/P	S/P
Channel Type			

Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons		X	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes I, <u>Jeremy Ayotte</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.
Polygon No:			Method employed if other than TR
	LC	SH	TR
SPVT Type			X
Polygon No:			Method employed if other than TR

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

SPVT Type	LC	SH	TR	
Polygon No:		Method employed if other than TR		
SPVT Type				

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	1	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)	15					
Litter fall and insect drop ZOS (m)	15					
Shade ZOS (m) max	30	South bank	Yes		No	X
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)					
Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report	
SPEA maximum	15	(For ditch use table3-7)				

Segment No:		If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)						
Litter fall and insect drop ZOS (m)						
Shade ZOS (m) max		South bank	Yes		No	
SPEA maximum		(For ditch use table3-7)				

Segment No:		If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)						
Litter fall and insect drop ZOS (m)						
Shade ZOS (m) max		South bank	Yes		No	
SPEA maximum		(For ditch use table3-7)				

I, Jeremy Ayotte, hereby certify that:

- a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;
- b) I am qualified to carry out this part of the assessment of the development proposal made by the Hughes;
- c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
- d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

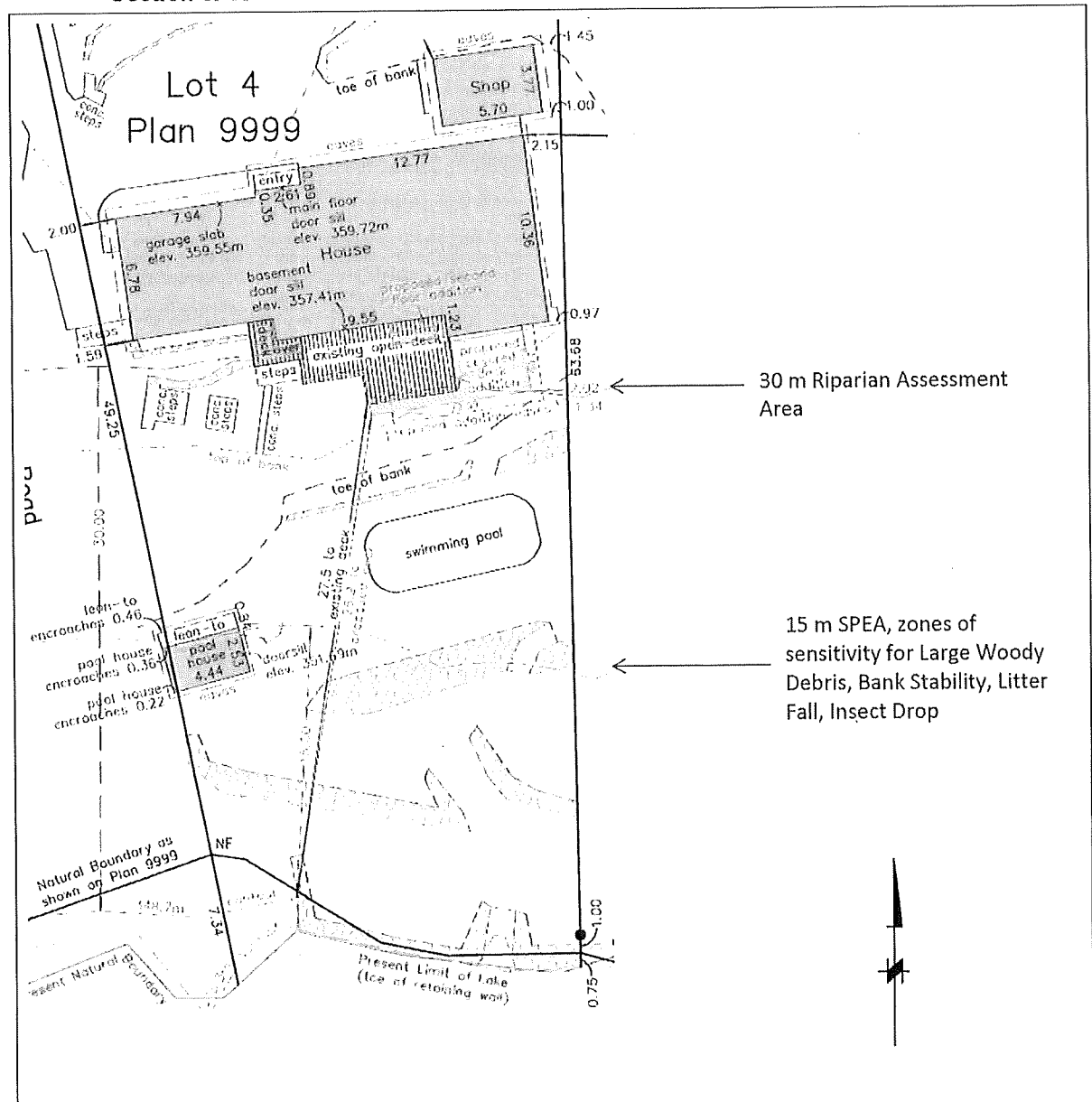
Comments

The SPEA boundary is 15 m from the high water mark of Shuswap Lake (348.7 m).

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 3. Site Plan



FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 4. Measures to Protect and Maintain the SPEA

This section is required for detailed assessments. Attach text or document files, as need, for each element discussed in Part 4 of the RAPR. It is suggested that documents be converted to PDF *before* inserting into the assessment report. Use your "return" button on your keyboard after each line. You must address and sign off each measure. If a specific measure is not being recommended a justification must be provided.

1. Danger Trees	There are no danger trees on this lot that require removal as a consequence of this development. If there are concerns about danger trees within the 15 m SPEA posing a threat to life and property, a danger tree assessment will be required by a certified wildlife/danger tree assessor. Any woody debris from danger tree removal within the SPEA must remain to decay on the forest floor.
I, <u>Jeremy Ayotte</u> , hereby certify that: e) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> ; f) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u> ; g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.	
2. Windthrow	Windthrow is an issue where new developments remove part of an existing forest, leaving the remaining trees exposed to high velocity winds. There are no signs of wind damage to existing trees on the subject property or on adjacent lots (e.g., broken tops, uprooted trees).
I, <u>Jeremy Ayotte</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> ; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.	
3. Slope Stability	Slope stability issues are a major area of concern where development occurs on or near steep lakeshore banks. The proposed development will occur on a previously cleared area adjacent to the house. Slope stability on the lot will not be adversely affected by this development. A hydrogeology assessment has been completed by Watterson Geoscience Inc and submitted to the RAR Notification System to accompany this report.
I, <u>Jeremy Ayotte</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i> ; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.	
4. Protection of Trees	There are no trees within the SPEA that require removal for the construction of this house outside of the 15 m SPEA boundary. Prior to excavation for the foundation, the 15 m SPEA boundary must be clearly marked. The rooting zone of any trees near the SPEA boundary must be protected (root zones typically extend out a similar distance as the tree's branches or crown).
I, <u>Jeremy Ayotte</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the	

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

<p><i>Riparian Areas Protection Act;</i></p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
5. Encroachment	<p>Although the Riparian Areas Regulation strongly supports permanent fencing of SPEA boundaries, and that certain aesthetic choices in fencing (e.g., split rail) can serve to protect these sensitive areas against encroachment and disturbance while minimizing the visual impact, the current owners will not be installing fencing as a component of this development. Fencing is not being installed at the SPEA boundary because it is not a mandatory requirement of the RAR Protection Regulation and it is not desired by the current owners.</p> <p>Encroachment within the SPEA is defined as soil disturbance and vegetation removal. The potential of the SPEA to support a thriving band of natural vegetation must be protected in support of fish and aquatic habitat values in Shuswap Lake.</p>
<p>I, <u>Jeremy Ayotte</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
6. Sediment and Erosion Control	<p>Protecting the 15 m SPEA as an area of natural vegetation will help stabilize shoreline bank soils and minimize the erosive power of wave action. During excavation for the addition, all stockpiled material must be kept out of the 30 m Riparian Assessment Area or adequately tarped to avoid sedimentation impacts to existing vegetation within the SPEA.</p>
<p>I, <u>Jeremy Ayotte</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	
7. Stormwater Management	<p>The subject property is sloped toward the shoreline through the length of the subject property, from Gray Road to the lake. Stormwater from the new roof eaves troughs and road surface must not directly reach Shuswap Lake. Stormwater must not compromise the existing vegetation (Douglas fir, Ponderosa Pine trees) within the 15 m SPEA.</p> <p>The attached hydrogeology report concludes that the proposed project will not negatively impact underlying groundwater and Shuswap Lake water quality.</p>
<p>I, <u>Jeremy Ayotte</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods</p>	

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

set out in the Minister's technical manual to the Riparian Areas Protection Regulation.	
8. Floodplain Concerns (highly mobile channel)	The site for this addition to the existing home is elevated above the Regional District's minimum building envelope for flood protection. There are no other known floodplain concerns related to this property or the proposed development.
<p>I, <u>Jeremy Ayotte</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the <i>Riparian Areas Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Hughes</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.</p>	

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Section 5. Environmental Monitoring

Attach text or document files explaining the monitoring regimen Use your "return" button on your keyboard after each line. It is suggested that all document be converted to PDF *before* inserting into the PDF version of the assessment report. Include actions required, monitoring schedule, communications plan, and requirement for a post development report.

A QEP (Jeremy Ayotte RPBio) has been on site to conduct the field component of the detailed assessment.

Post Development Reporting

A Post Development Report and letter from QEP will be submitted to the appropriate agencies through the RAR notification system.

Actions required by the developer

- Clearly mark the 15 m SPEA boundary prior to excavation or construction.

Actions required by QEP

- Site visit to complete post-development report and as any issues arise.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 6. Photos



Photo 1. View south from the north side of the subject property. The location of the proposed works is above the pool area on the left edge of the photo.

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Section 7. Professional Opinion

Qualified Environmental Professional opinion on the development proposal's riparian assessment.

Date

December 10, 2019

1. I/We

Jeremy Ayotte

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

hereby certify that:

- a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer Hughes, which proposal is described in section 3 of this Assessment Report (the "development proposal"),
- c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
- d) In carrying out my/our assessment of the development proposal, I have/We have followed the specifications of the Riparian Areas Protection Regulation and assessment methodology set out in the minister's manual; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

- a) ☐ the site of the proposed development is subject to undue hardship, (if applicable, indicate N/A otherwise) and
- b) ☒ the proposed development will meet the riparian protection standard if the development proceeds as proposed in the report and complies with the measures, if any, recommended in the report.

[NOTE: "Qualified Environmental Professional" means an individual as described in section 21 of the Riparian Areas Protection Regulation.]

FORM 1

Riparian Areas Protection Regulation - Qualified Environmental Professional - Assessment Report

Submission Instructions
Riparian Areas Protection Regulation – Qualified Environmental Professional –
Assessment Report RAR-QEP-AR

Forms you will need to complete are

- Form 1 which has the database information, the description of the fisheries resources, development site plan, measures to protect and maintain the SPEA, and environmental monitoring.
- Form 2, if more QEPs are part of the project team.
- Either Form 3 the detailed assessment form(s) or Form 4 simple assessment form(s) which is for the results of the riparian assessment (SPEA width). Use enough copies of the form to complete the assessment of the site.
- Form 5 is the photo form(s). Duplicate for additional photos.

NB: Refer to Part 4 of the RAPR and the Technical Manual for detailed instructions on the information required for completing the Assessment Report.

A complete Riparian Assessment Report based on the template forms must be converted to a *single* Portable Document Format PDF file prior to uploading onto the Notification System.

The Assessment Report must be submitted complete with all information specified and posted to the notification system to be reviewed by the province. Upon approval notification will be provided to the local government.

Tips for working with MS Word Template Forms**Using the forms**

- Before beginning, print a hard copy of the form and the guidance files for reference
- Open the template
- Enter data into the shaded fields on the form
- Use TAB to move from one field to another; SHIFT-TAB to go in reverse
- Text and digital photos may be inserted from other applications
- The amount of text that can be entered in each box is limited and cannot be changed by the user; boxes with date information, for example, require input like: yyyy-mm-dd.

Saving the completed form

- Assign name to the completed form
- Save a word document (*.doc file)
- Do not overwrite the Template (*.dot file) with your completed form
- If you do overwrite the template, you can download a new copy from this web site

NOTICE OF REGISTRATION

Date of Issue: April 9, 2020
Submitter's Name: Hayley Graham
File Reference: DP725-233-HUGHE

Description: Lakes 100m and Riparian Areas Regulation Development Permit

The following application(s) have now reached final status:

LEGAL NOTATION

CA8129004

REGISTERED

Product support is available online at <https://help.ltsa.ca>. You can also call the Customer Service Centre for land title and survey practice matters, or Technical Support for all registry and product questions at 604-630-9630 or toll free at 1-877-577-LTSA (5872). Non-urgent support requests can be submitted online at <https://ltsa.ca/contact-us-0>.