
Professional Agrologist Review

*of C&F Land Resource Consultants Ltd. Agricultural Capacity
Assessment for 4800 Springs Boulevard, Delta, BC*

Prepared for:

**The Corporation of Delta
4500 Clarence Taylor Crescent
Delta, B.C., V4K 3E2**



Prepared by:

EBB Environmental
Consulting Inc.

Professional Agrologist Review

***Of C&F Land Resource Consultants Ltd. Agricultural Capability
Assessment for 4800 Springs Boulevard, Delta, BC.***

PREPARED FOR

The Corporation of Delta
4500 Clarence Taylor Crescent
Delta, B.C., V4K 3E2

SUBMITTED

2 June 2017

PREPARED BY

EBB Environmental Consulting Inc.
PO Box 18180 1215C 56th Street
Delta, British Columbia, V4L 2M4
Phone: 604-943-3209
Fax: 604-948-3273
Toll-Free: 1-877-943-3209
Website: www.ebbconsulting.ca
Email: enquiry@ebbconsulting.ca

PRINCIPAL CONTACT

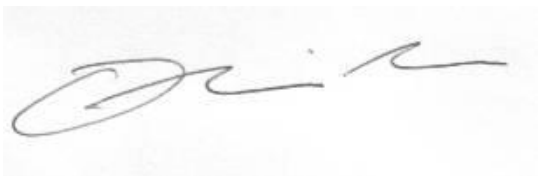
Oliver Busby, MBA, PAg, RPBio
Office: 604-943-3209
Email: gbusbyt@ebbconsulting.ca

Document Limitations and Certification

This Professional Agrologist Review was prepared for the Corporation of Delta (Delta) by EBB Environmental Consulting Inc. (EBB) for the proposed development at 4800 Springs Boulevard, Delta, BC. The material contained herein reflects the consulting team's best judgement in light of the information available to the time of preparation. It is intended to be used solely in relation to the Project as described above. Use of such documentation, whether in whole or in part, by third parties and/or for purposes other than the Project as herein described is not permitted and warranted.

Respectfully submitted;

EBB Environmental Consulting Inc.



Originally Signed

Oliver Busby, MBA, RPBio, PAg
Principal
EBB Environmental Consulting Inc.

I certify that the work described herein fulfills standards acceptable of a Professional Agrologist.

Table of Contents

1	Introduction	1
2	Methodology.....	1
2.1	Field Assessment	1
2.2	Report Review	1
3	Results.....	2
3.1	Site Description.....	2
3.2	Soil Descriptions	4
4	Assessment of Agricultural Suitability and Impact Analysis	6
4.1	Agricultural Suitability	6
4.1.1	Soil Bound Agricultural Uses.....	6
4.1.2	Non-Soil Bound Agricultural Uses	6
4.2	Impact Analysis	6
5	Conclusions	7

1 Introduction

At the request of the Corporation of Delta (Delta) EBB Environmental Consulting Inc. (EBB) conducted a peer review of an Agricultural Capability Assessment prepared by C&F Land Resource Consultants Ltd. (C&F) for the proposed development at 4800 Springs Boulevard, Delta, BC (the Subject Property). This peer review has been prepared by Oliver Busby, MBA, PAg, RPBio. A field assessment was completed on 31 May 2017.

2 Methodology

2.1 Field Assessment

A field assessment was completed to independently verify the soil descriptions and property conditions. Three soil pits were established within the property to document the existing soil conditions and to verify the C&F assessment.

2.2 Report Review

The Agricultural Capacity Assessment and associated supporting documents, as provided by Delta, were reviewed to determine consistency and appropriateness of impact analysis on the Subject Property and to independently verify the findings and conclusions presented within the assessment.

The following documents were considered for the peer review:

Table 1. List of documents reviewed for the professional agrologist peer review.

List of Reviewed Documents			
Document No.	Title	Author	Date
1	Assessment of Agricultural Capability for 4800 Springs Boulevard, Delta, BC	C&F Land Resource Consultants Ltd	22 May 2016
2	Addendum to May 21, 2016 Assessment of Agricultural Capability for 4800 Springs Boulevard, Delta, BC.	C&F Land Resource Consultants Ltd	16 May 2017
3	Survey Plan of Existing Topographic Features	Watson & Barnard, BC Land Surveyors.	6 Aug 2015
4	Revised Site Plan for Gibbs & REMI PL LMP41748	Unattributed	Undated

3 Results

3.1 Site Description

Field observations confirm that the Subject Property is not currently being utilized for agricultural purposes, and has been left untouched. Land alterations, associated with the removal of the fill pile, infill of depressions, and construction of a temporary gravel parking pad are clear. The Subject Property is surrounded by several non-agricultural activities, including:

- North – Golf course infrastructure, highway infrastructure, commercial waterslides, Tsawwassen Mills Mall, commercial parking lot.
- West – Ongoing preloading within Tsawwassen First Nation lands.
- South – Golf course.
- East – Condominium development.

Figures 1 and 2 show the current activities ongoing within the Subject Property, and Figure 3 shows the surrounding land uses.



Figure 1. Panoramic view of the northern section of the Subject Property, looking south.



Figure 2. Panoramic view of the northern section of the Subject Property, looking north.



Figure 3. Description of land uses surrounding the Subject Property.

3.2 Soil Descriptions

Three soil test pits within the Subject Property were established to verify soil descriptions. Descriptions of test pit locations within C&F’s report were not sufficient to replicate specific pit locations, as such, tests pits were established in new locations. Furthermore, several of the original tests pits were located within the northern section of the property, which at the time of the survey was a gravel parking lot for the adjacent condominium construction. Subsequently, no test pits were established within this area. Test pits were hand dug in central locations within the soil units to minimize the effects from adjacent Soil Units or land uses. Test soil pits were located; south of the hedgerow occupying the middle of the Subject Property; between the hedgerow and the gravel parking lot; and, along the remaining fill pile within the northwestern corner of the Subject Property. Overall, observations from the soil in Soil Units I and II was consistent with observations presented by C&F. Key differences in findings relate to observed rooting depths and drainage within Soil Unit II. EBB’s observations indicted that the bulk of observed roots occurred at 20 cm depth with decreased root observations to 85 cm depth, indicative of relatively unrestricted rooting, whereas C&F indicated that rooting was restricted to 15 cm. Drainage restrictions were not apparent within Soil Unit I, as no evidence of ponding of water (i.e., areas devoid of vegetation, surface fracturing) were observed within the Subject Property, with the exception of a small area adjacent to the gravel pad. This ponding was attributed to the decreased permeability of the adjacent gravel pad resulting in overland flows. Soil textures were indicative of soils that are moderately well to well drained, though likely restricted by the underlying silty clay during prolonged field saturation.

Comparative observations soil units I and II are summarised in Tables 2 and 3.

Table 2. Summary of comparative soil observations within Soil Unit I.

Comparison of Soil Descriptions – Soil Unit I		
Soil Characteristic	C&F	EBB
Cover	Wildgrasses, sedges and buttercups	Canada thistle, American vetch, Himalayan blackberry, buttercup, graminoids.
Topography	Near level with slight undulations	Near level with slight undulations
Horizon 1 Texture	Grey-brown sandy loam	Grey-brown sandy loam
Horizon 2 Texture	Blue-grey silty clay	Blue-grey silty clay
Horizon 3 Texture	Variiegated native sand	Sand
Soil Drainage	Poor	Moderately Well

Comparison of Soil Descriptions – Soil Unit I		
Soil Characteristic	C&F	EBB
Rooting Depth	15 cm	50% of Roots: 20 cm 95% of Roots: 85 cm
Watertable Depth	110 cm	100 cm
Unimproved Agricultural Capability Rating	5 _{WDF}	5 _F
Main Limitations for Agriculture	Severe drainage, rooting depth and fertility restrictions	Fertility

Table 3. Summary of comparative soil observations within Soil Unit II.

Comparison of Soil Descriptions – Soil Unit II		
Soil Characteristic	C&F	EBB
Cover	Unreported	Exposed soils, Himalayan blackberry, graminoids. birch, red alder
Topography	Near level with slight undulations	Near level with slight undulations
Horizon 1 Texture	Brownish-grey silty clay	Brownish-grey silty clay
Horizon 2 Texture	Grey mixed-textured fill	Grey mixed-textured fill
Soil Drainage	Poor	Poor
Rooting Depth	15 cm	20 cm
Watertable Depth	n/a	n/a
Unimproved Agricultural Capability Rating	5 _{WDF}	5 _{WDF}
Main Limitations for Agriculture	Severe drainage, rooting depth and fertility restrictions.	Drainage, rooting depth and fertility.

4 Assessment of Agricultural Suitability and Impact Analysis

4.1 Agricultural Suitability

4.1.1 Soil Bound Agricultural Uses

C&F indicated in their assessment that soil bound uses, including growing annual/perennial crops and pasture for livestock, were not feasible on the Subject Property due to the soil limitations. Measures to remediate the soil would be extensive and not financially feasible to remove the imported fill and replace with agriculturally capable soil.

Given the anthropogenic alterations to the soil and the associated soil limitations, EBB agrees with the C&F's assessment of the limited suitability of the Subject Property to support soil bound agricultural uses.

4.1.2 Non-Soil Bound Agricultural Uses

C&F indicated several non-soil bound agricultural uses that the Subject Property could be utilized for, including greenhouses, livestock, mushroom production, and horticultural pot nursery production. Of these, both greenhouses and horticultural pot nurseries are operations that are feasible on the Subject Property, all remaining are excluded due to the surrounding residential complexes and recreational uses.

Given the location and quality of the property horticultural pot nursery could succeed but would be greatly challenged by access through adjoining commercial and residential areas. The utilization of this parcel for industrial scale greenhouses is not ideal due to the limited size of the parcel that would not allow for optimal production or future expansion, conflicts with neighbouring residential properties (light pollution affecting the properties directly above and adjacent), and limited access for commercial traffic required for greenhouse operations. Overall, the location of the Subject Property adjacent to residential and recreational properties severely restricts the ability of non-soil farming activities to operate at a sustainable level.

4.2 Impact Analysis

The overall intent of C&F's Agricultural Capability Assessment is to ascertain the impact of agricultural activities or their exclusion on the local and regional agricultural productivity. EBB reviewed the rationales provided by C&F, and have provided comments in Table 4.

Table 4. Review and comment on C&F impact analysis.

Review of Impact Analysis

Assessment Variable	Impact	Comments
Impact of agricultural development of subject lands on surrounding lands	Negligible	Agree. All surrounding land uses are non-agricultural.
Potential impact of the proposed non-agricultural development on local and regional agricultural productive capability	None	Agree. As the Subject Property has not been utilized for agricultural operations for a lengthy period, the development of the property would not result in an immediate loss of agricultural productivity. Furthermore, given the limited area of the Subject Property, any contributions of agricultural operations would be limited.
Potential of development to impact surrounding agricultural operations	None	Agree. A review of the Subject Property and current aerial imagery indicate that no agricultural operations occur within the immediate vicinity of the Subject Property.

5 Conclusions

EBB has conducted a thorough professional review of the Agricultural Capability Assessment prepared by C&F Land Resource Consultants Ltd. and has concluded that:

- The Subject Property is a small, isolated parcel surrounded by non-agricultural uses, which limits the overall viability of farming operations on the property;
- The farmable land within the Subject Property is restricted by several limiting factors, including fertility, drainage, and rooting depths;
- While slight variations in the limitations within Soil Unit I exist between C&F and EBB, the overall impact to the agricultural capability of the Subject Property remained unchanged;
- The conclusions presented by C&F are representative of the conditions as observed by EBB; and,
- C&F's overall conclusion, that the exclusion of 1.8 hectares of land within the Subject Property would not have a negative impact on local or regional agricultural productivity, is accurate.