



May 11, 2017

Reference No. 088877

Ms. Laura L. Brown, PhD
Area Director
South Coast Area
Pacific Region
Fisheries and Oceans Canada
3225 Stephenson Point Road
Nanaimo, BC V9T 1K3

Dear Ms. Brown:

**Re: Fisheries and Oceans Canada Letter dated December 19, 2016
Upland Landfill – Waste Discharge Application
7295 Gold River Highway, Campbell River, British Columbia**

GHD Limited (GHD) has prepared this letter on behalf of Upland Excavating Ltd. (Upland) to respond to a letter dated December 19, 2016 to the Ministry of Environment (MOE) from Fisheries and Oceans Canada (DFO) (DFO letter). Upland and GHD have reviewed the DFO letter and provide the following response.

1. Background

1.1 Waste Discharge Application

Upland submitted a Waste Discharge Application (Application) to the MOE on May 27, 2016 for an Operational Certificate for the solid, non-hazardous waste engineered landfill located at 7295 Gold River Highway (Landfill), Campbell River, British Columbia. The following technical reports were submitted in support of the Application, which contain the design, technical studies, and investigations completed by GHD and Upland:

- Technical Assessment Report
- 2016 Design, Operation, Closure Plan
- Hydrogeology and Hydrology Characterization Report
- 2016 Geotechnical Investigation Report

Upland and GHD also implemented two stakeholder consultation programs to engage and invite comment from government agencies, First Nations, adjacent property owners, community groups, and the public. The stakeholder consultation programs took place in February-March 2016 and September-October 2016, respectively. The stakeholder consultation programs were summarized in two Stakeholder Consultation Summary Reports provided to the MOE.



1.2 Fisheries and Oceans Canada (DFO)

The DFO was included in the stakeholder consultation. Upland and GHD understand that DFO staff is familiar with the Application. DFO provided comment regarding the Application directly to the MOE in their December 19, 2016 letter. The DFO letter is provided in Attachment A.

The DFO emphasizes the importance of the Quinsam River Hatchery located in Campbell River, and the importance of ensuring short-term and long-term water quality for the operations of the Salmonid Enhancement Program (SEP) including the salmon tagging, adult recovery and biological sampling to support the DFP and its Pacific Salmon Treaty obligations. The DFO requests that the MOE Environmental Protection Division review all impact assessment conducted by Upland, GHD, GW solutions, and other applicable assessments.

2. Review and Response

Upland and GHD have reviewed the DFO letter dated December 19, 2016 regarding the Application. The letter has been reproduced by paragraph, with the text from the letter is presented in ***bold and italic***, below. GHD has provided responses to each paragraph below.

Paragraph 1

It is our understanding that Upland Excavating Ltd. has applied to the Ministry of Environment to landfill 25,000 cubic metres a year of solid nonhazardous waste (including construction and demolition waste, land clearing debris and contaminated soil) and to collect and treat the leachate at its site at 7295 Gold River Highway, Campbell River. The site is located within the Campbell River and Quinsam River Watersheds, immediately upstream of the Quinsam River Hatchery, a Facility owned and operated by Fisheries and Oceans Canada (DFO), Salmonid Enhancement Program (SEP).

GHD Response

Upland has applied to the MOE to receive an Operational Certificate for the landfill to receive an average of approximately 25,000 cubic metres of solid, non-hazardous waste per year. The waste will be deposited into a lined engineered cell, and leachate will be collected and treated on-site. The treated leachate will be discharged to an on-site infiltration pond. The landfill is located at the base of the 6.7 hectare aggregate pit located within the Upland property. The pit is approximately 20 metres deep. The Upland property is located at 7295 Gold River Highway, Campbell River, British Columbia.

The Upland property is located within the Quinsam River Watershed, which is a sub-watershed to the Campbell River Watershed. We note the following:

- The groundwater below the base of the aggregate pit has been studied by GHD and the direction of groundwater flow is toward the southeast.



- The Quinsam River Hatchery is approximately 4 kilometres to the east-northeast of the Upland property.
- There are no natural surface water courses on the Upland property. There is no surface water discharge from the base of the aggregate pit. All precipitation that falls onto the aggregate pit infiltrates through the base of the pit.
- The Quinsam River runs approximately south-north to the east of the Landfill and is located approximately 4 kilometres to the east.
- The Cold Creek Watershed is a sub-watershed to the Quinsam River Watershed. The nearest surface water within the Cold Creek Watershed is approximately 2 kilometres to the east of the Upland property.

As a result, the Landfill within the aggregate pit on the Upland property is not immediately upstream of the Quinsam River Hatchery. GHD has developed additional hydrogeologic and hydrologic information, which it will be submitted to the MOE to address the Stakeholder concerns.

Paragraph 2

As you are aware, the Campbell/Quinsam system is extremely important from a sport and commercial fishery perspective. In recent years, DFO has spent more than \$13 million to upgrade and re-fit the hatchery, and annually spends hundreds of thousands of dollars to operate the hatchery. In addition to providing support for a variety of community programs, Quinsam River Hatchery is involved in salmon tagging, adult recovery and biological sampling to support DFO and its Pacific Salmon Treaty obligations.

GHD Response

Upland and GHD understand the value and importance of Quinsam River Hatchery. The Landfill is being designed to be protective of the environment, and has been prepared in accordance with the MOE Landfill Criteria for Municipal Solid Waste, Second Edition, June 2016.

Paragraph 3

The proposed bio-remediation facility poses large water quality risks to salmon and our enhancement objectives in this system. It is critical to the long term production goals in the Quinsam and Campbell system that the Provincial Government's Environmental Division reviews all impact assessments conducted by Upland consultants including GW Solutions Inc.'s review of the Upland waste discharge application to ensure there is no short or long-term water quality risks to Quinsam River and/or Cold Creek and the Quinsam River Hatchery water supply.

GHD Response

The quoted bio-remediation facility is no longer being pursued by Upland. An application for a soil bio-remediation facility was at one time proposed by Upland; however, that application was withdrawn.



The current Application under the *Waste Discharge Regulation* is for a solid, non-hazardous waste engineered landfill to be designed, constructed and operated in accordance with the MOE's Landfill Criteria for Municipal Solid Waste – Second Edition, dated June 2016.

The Landfill design and monitoring program are intended to be protective of the receiving environment. The Landfill will consist of lined engineered cells that will collect leachate from the waste. All water that comes in contact with the waste will be collected and managed as leachate. The collected leachate will be conveyed to an on-site leachate treatment system within the aggregate pit. The leachate will be treated in batches and sampled to analyze the discharge parameters prior to discharge to the on-site infiltration pond, also located in the base of the pit. The treated leachate will meet the water quality discharge criteria (CSR water quality standards) prior to being infiltrated. The groundwater monitoring program will be implemented to collect groundwater samples upgradient and downgradient of the landfill to verify the groundwater quality within the Uplands property. The groundwater quality will meet the approved MOE criteria at and beyond the Upland property boundary. Annual Operations and Monitoring Reports will be submitted to the MOE to present the results of the monitoring of the leachate, leachate treatment system and groundwater quality to show compliance with the MOE criteria. Cold Creek and Quinsam River are not considered potential receptors due to the direction and distance from the Upland property, as discussed in the response above to Paragraph 1, and because the groundwater leaving the Site will meet the approved MOE water quality criteria.

The DFO requests that all impact assessments conducted by Upland, GHD, and GW Solutions be reviewed. We understand that GW Solutions was retained by the Campbell River Environmental Committee (CREC) to provide a review on behalf of CREC of the hydrogeology characterization presented in the Hydrogeology and Hydrology Characterization Report (GHD 2016). GHD has reviewed the GW Solutions comments and provided responses to the MOE.

Paragraph 4

Prior to any decision being made with regards to this application, we respectfully request a copy of your assessment of potential water quality impacts and mitigations being considered to reduce or eliminate those impacts. Please feel free to contact Dale Desrochers at 250-756-7122 or by email at Dale.Desrochers@dfo-mpo.gc.ca should you require any additional information.

GHD Response

GHD and Upland cannot comment on this request; however, the landfill design, leachate treatment objectives, the on-site water quality impact assessment, attenuation safety factors, and contingency measures proposed by Upland can be reviewed in the technical reports listed in Section 1.1 of this Letter. GHD can provide electronic copies of the technical reports upon request.



GHD trusts this letter will provide the DFO with the responses requested. The MOE has advised it will be reviewing your comments and our responses as part of its review of the application and supporting reports. Should you have any additional questions please do not hesitate to contact us.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read 'Greg. Ferraro', written in a cursive style.

Gregory D. Ferraro, P. Eng.

A handwritten signature in blue ink, appearing to read 'Shauna Sturgeon', written in a cursive style.

Shauna Sturgeon, P. Eng.

SS/sz/01

Encl.

cc: Allan Leuschen – Ministry of Environment
Terry Stuart – Upland Excavating Ltd.
Mark Stuart – Upland Excavating Ltd.
Brian Fagan – Upland Excavating Ltd.

Attachment A DFO Letter



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Area Director
South Coast Area
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Fisheries & Oceans Canada
3225 Stephenson Point Road
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3225 Chemin de Stephenson Point
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DEC 19 2016

MOE File # 107689

Allan Leuschen
Environmental Protection Officer
Ministry of Environment
2080 Labieux Road
Nanaimo, BC V9T 6J9

Dear Mr. Leuschen

Subject: Upland Excavating Ltd. Application to Landfill Waste, Collect and Treat Leachate at 7295 Gold River Highway, Campbell River.

It is our understanding that Upland Excavating Ltd. has applied to the Ministry of Environment to landfill 25,000 cubic meters a year of solid nonhazardous waste (including construction and demolition waste, land clearing debris and contaminated soil) and to collect and treat the leachate at its site at 7295 Gold River Highway, Campbell River. The site is located within the Campbell River and Quinsam River Watersheds, immediately upstream of the Quinsam River Hatchery, a Facility owned and operated by Fisheries and Oceans Canada (DFO), Salmonid Enhancement Program (SEP).

As you are aware, the Campbell/Quinsam system is extremely important from a sport and commercial fishery perspective. In recent years, DFO has spent more than \$13 million to upgrade and re-fit the hatchery, and annually spends hundreds of thousands of dollars to operate the hatchery. In addition to providing support for a variety of community programs, Quinsam River Hatchery is involved in salmon tagging, adult recovery and biological sampling to support DFO and its Pacific Salmon Treaty obligations.

The proposed bio-remediation facility poses large water quality risks to salmon and our enhancement objectives in this system. It is critical to the long term production goals in the Quinsam and Campbell system that the Provincial Government's Environmental Division reviews all impact assessments conducted by Upland consultants including GW Solutions Inc.'s review of the Upland waste discharge application to ensure there is no short or long-term water quality risks to Quinsam River and/or Cold Creek and the Quinsam River Hatchery water supply.

Canada

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Thanks for your attention to this very important matter.



Laura L. Brown, PhD
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South Coast Area | Secteur de la côte sud
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Cc: Gevan Mattu, Manager, Compliance Promotion & Expert Support, EC
Adam Silverstein, A/ Regional Manager, SEP-CIP, DFO
Dave Willis, A/Section Head, South Coast SEP Operations, DFO
Laurent Frisson, Quinsam Hatchery Manager, DFO