

April 27, 2017

XCG File No. 4-2111-05-02

Ms. Robyn Cooper
Manager of Waste Reduction & Recovery
Sunshine Coast Regional District
1975 Field Road
Sechelt, British Columbia V0N 3A1

Re: Post-Closure Use Guidelines and Best Management Practices, Gibsons Landfill

Dear Ms. Cooper:

1. INTRODUCTION

XCG Consulting Limited (XCG) is pleased to present this letter to the Sunshine Coast Regional District (SCRD) outlining post-closure use guidelines and best management practices for the Gibsons Landfill (Site).

XCG understands that the Site is located within a portion of the Sprockids Park, which includes cycling trails and a skills area. The skills area is located on the closed landfill and the landfill cover has been altered to provide paths for cyclists, and wooden ramps have been installed. Exposed waste has been reported in the vicinity of the skills area.

XCG further understands that the SCRД Parks Department has stockpiled fill material at the Site with the intention of covering the exposed waste. XCG confirmed the existing conditions at the Site by undertaking a Site inspection on July 25, 2016.

In order to ensure that the post-closure use of the Site respects the recommendations outlined in the “Gibsons Landfill Closure Plan” (Dayton & Knight Ltd., 1996) and is consistent with best management practices for closed landfills, XCG has compiled guidelines for future use/development of the closed landfill.

2. BACKGROUND

The Site is located on Mountain Bike Park Road, approximately 300 metres west of Steward Road and approximately 250 metres north of the Sunshine Coast Highway, north of the Town of Gibsons. Site access is via Mountain Bike Park Road (formally Steward Road), running east-west to the southeast corner of the Site. Mountain Bike Park Road wraps around the northern part of the skills area, but public vehicular access is blocked via a gate at the southeast corner of the Site. There is a gravel parking area off of Mountain Bike Park Road east of the gate. The legal description of the Site is Lots 4 and 5 of District Lot 1507, Group 1, New Westminster District, Plan 3795. The Site is located in the Langdale Area of SCRД Electoral Area F, West Howe Sound. A Site location map is included as Figure 1.



The SCRD manages the Site, which includes a closed “natural control landfill” reported to have historically been used for the disposal of non-hazardous municipal solid waste. According to Dayton & Knight Ltd. (1996), the Site had been in operation since the early 1970s and encompassed a total area of approximately 1 to 1.5 hectares. The landfill was closed in 1986.

According to Dayton & Knight Ltd. (1996), the landfill operation was generally uncontrolled. Waste was dumped, burnt and the burn residue spread out by machine, until burning was discontinued after 1980. Between 1980 and 1986, the landfill was restricted to the disposal of stumps and non-putrescible waste and was operated seasonally. Cover material was obtained from an area adjacent to the Site and, at the time of closure, surficial grading was fairly flat relative to surrounding topography. According to the SCRD, as per recommendations from the Closure Plan, additional cover material was placed on the landfill in 1997, filling any depressions and ensuring a minimum 4 percent slope for drainage.

3. SITE VISIT

Ms. Elisabeth Mance of XCG undertook a Site inspection to confirm existing conditions at the Site on July 25, 2016, accompanied by Ms. Robyn Cooper and Ms. Cathy Kenny of the SCRD. Photos from the Site inspection are attached.

According to the SCRD, some historic development in the skills area of Sprockids Park has been undertaken by community volunteers which had not been planned or sanctioned by the Infrastructure Services Department, Solid Waste Division or the Parks Department.

At the time of the Site visit, the skills area consisted of several elevated boardwalks and a small pump track. The elevated boardwalks were constructed of wood and tires with wood pile supports embedded into the existing landfill cover. The depth of the wood pile supports is unknown; however, it is assumed that the supports extend to a significant depth within the cover system and/or waste in order to adequately accommodate the boardwalk structure and bikers making use of the park. The small pump track consisted of several soil berms with most of the track established above the existing landfill cover. Short portions of the pump track appear to cut into the existing landfill cover.

Fill material stockpiles were observed to the southwest and northwest of the skills area, with a few smaller stockpiles located to the northeast. A temporary security fence was located to the southwest of the skills area, preventing public access to the fill material stockpiles located to the southwest. The fill material stockpiles to the northwest and northeast are fully accessible. It is understood that the fill material stockpiles located to the northeast were brought in to cover waste material which had recently been exposed when existing blackberry bushes were removed.

Paper machine dryer felt was observed along the southeast side of the pump track extending to the northeast. It is understood that the Parks Department has been using the dryer felt as a barrier between the existing landfill cover and the fill material that has been stockpiled.

Small quantities of waste material were observed in the vegetated areas surrounding the skills area. The exposed waste, which was limited to a few areas, consisted primarily of plastics and metals.



4. GUIDELINES AND BEST MANAGEMENT PRACTICES

The following section provides guidelines and best management practices that should be followed to comply with the approved Closure Plan and to minimize the risk from future use/development of the Site to public health and the environment.

As per the Closure Plan and in keeping with best management practices, the following guidelines should be incorporated into Site management:

- Ideally, development on or around the Site should be discouraged. Intrusive activities on the landfill cover have the potential to create a contaminant exposure pathway and uncover waste that may contain hazardous constituents. As discussed in the Closure Plan, the use or development of the Site must not result in damage to the final cover and intrusive work must be prohibited. Any proposed development on or adjacent to the Site should be reviewed and approved by the SCRD, Infrastructure Services Department, Solid Waste Division.
- Should a development (i.e. enclosed structure) be proposed on and/or adjacent to the landfill, an assessment to determine the presence of landfill gas and any other contaminants or risks should be undertaken. Appropriate mitigative measures should be incorporated into the development based on the results of the assessment.
- Per the Closure Plan, the Site can continue to be used for recreational purposes such as cycling paths provided they do not damage the final cover. Signage which clearly identifies the Site as a former landfill, the potential hazards, and the usage restrictions (i.e. no fires) should be erected.
- Existing diversion drainage ditches and Site vegetation (including trees) should be maintained.
- The Site should be sufficiently sloped to allow for surface water drainage from the cover to the existing diversion drainage ditches. Surface water should not be allowed to pond on the cover. As per the Closure Plan, cover material should be placed as required over the top surface of the landfill to ensure a 4 percent (minimum) slope is maintained.
- Additional cover material should be placed in disturbed areas and in areas with minimal coverage and/or where waste is exposed. As per the Closure Plan, fill material should preferably be a clean silty or clayey soil, with minimal gravel or larger rocks or other material, having low permeability (less than 1×10^{-5} cm/sec). Cover material should be at a minimum depth of 1 metre. Surface debris (i.e. metal) should be removed to reduce chance of injury. Areas which have been disturbed or require additional cover material should be vegetated to prevent erosion.
- Disturbance of the cover should be limited. If disturbance of the cover is required, the use of appropriate personal protective equipment should be worn. Disturbance of the cover can lead to exposure of hazardous substances, contaminated soil or unexpected chemicals, and physical hazards.
- Under no circumstance should the shallow groundwater table at or adjacent to the landfill be ingested or used for irrigation purposes unless thoroughly tested and approved by a qualified professional.



5. RECOMMENDATIONS

Based on the above guidelines and best management practices, and as per the requirements outlined in the Closure Plan, it is recommended that the skills area of Sprockids Park be relocated outside of the limit of waste, as there are features of the park (boardwalk supports and pump track) that have compromised the integrity of the final cover.

It is recommended that the final cover be rehabilitated to ensure that the landfill is adequately covered. Additional fill material should be added to areas where the existing cover has been disturbed and in areas with minimal coverage or where waste is exposed. Additional fill material should also be placed, as required, to ensure a minimum 4 percent grade is maintained for surface water drainage. The use of paper machine dryer felt as a barrier between the existing landfill cover and any new fill material is unnecessary. Any debris/waste that is currently exposed should be removed and all disturbed areas should be vegetated to prevent erosion.

Appropriate signage should be erected to clearly identify the Site as a former landfill, and to list potential hazards and usage restrictions.

Future development in and around the Site (if any) should be reviewed and approved by the SCRD Infrastructure Services Department, Solid Waste Division.

6. CLOSING

Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Yours very truly,

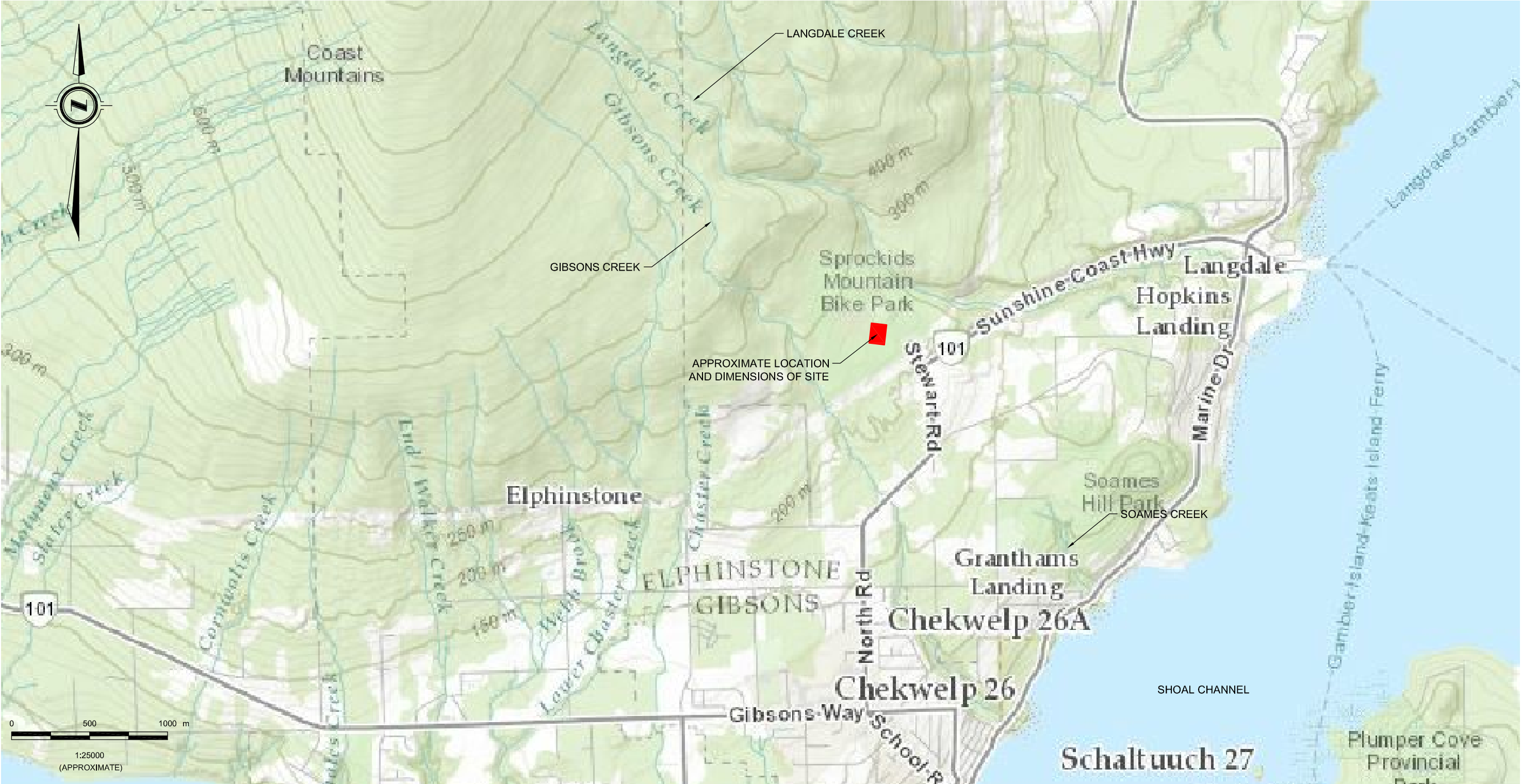
XCG CONSULTING LIMITED


A handwritten signature in blue ink, reading 'Elisabeth Mance'. The signature is written in a cursive, flowing style.

Elisabeth Mance, M.Sc., P.Eng.
Project Manager

Attachments: Attachment A - Figure 1
Attachment B - Site Inspection Photos

ATTACHMENT A
FIGURE



SITE LOCATION MAP		
POST-CLOSURE GUIDELINES		
GIBSONS LANDFILL		
SUNSHINE COAST REGIONAL DISTRICT		
 XCG CONSULTANTS LTD.		
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ATTACHMENT B
SITE PHOTOS







