City of Richmond

Report to Committee

Planning and Development Department

To:	Planning Committee	**Date:**	February 6, 2015
From:	Wayne Craig Director of Development	**File:**	NF 14-654364 AG 14-654361

Re: **Application by Ecowaste Industries Ltd. for an Agricultural Land Reserve Non-Farm Use (Continuation of Landfill Activities and Relocation of Soil Processing Operations) for the lands bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances**

Staff Recommendations:

1. That the Agricultural Land Reserve non-farm use application (NF 14-654364) by Ecowaste Industries Ltd. for a non-farm use to allow the continued operation of the existing landfill activities for a period of 20 years to achieve a finished elevation as outlined in the current Design Operation and Closure Plan approved by the Ministry of Environment on the lots bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances be endorsed and forwarded to the Agricultural Land Commission;

2. That the endorsed Agricultural Land Reserve non-farm use application (NF 14-654364) be forwarded with the staff recommendation that the Agricultural Land Commission incorporate all prior conditions specified in its original approval granted on April 23, 1993 under ALC resolution #173/93; and

3. That the Agricultural Land Reserve application (AG 14-654361) by Ecowaste Industries Ltd. for a non-farm use to allow the location of four (4) soil processing operations on the lots bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances for a period of 20 years be endorsed and forwarded to the Agricultural Land Commission.

Wayne Craig
Director of Development

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Att.

REPORT CONCURRENCE
CONCURRENCE OF GENERAL MANAGER

Staff Report

Origin

Ecowaste Industries Ltd. has submitted two (2) Agricultural Land Reserve (ALR) non-farm use applications on the following lots (the subject site):

- Lot 1 Section 15 Block 4 North Range 5 West Plan LMP40687 – 132.5 acres (53.6 ha); and
- Lot 2 Section 15 Block 4 North Range 5 West Plan LMP40687 – 17.5 acres (7 ha).

The subject site is located in the Agricultural Land Reserve (ALR) bounded by the unbuilt road allowances of Granville Avenue, No. 7 Road, Blundell Road and Savage Road (Attachment 1). A context map is contained in Attachment 2. These properties do not have a civic address. No road openings or subdivision to create additional lots is proposed in this application.

The ALR non-farm use applications are to:

1. NF 14-654364 – Allow the continued operation of the existing landfill activities for a period of 20 years on the subject site in order to comply with the current design, operations and closure plan approved by the Ministry of Environment (Recent updated approval – November 2013); and
2. AG 14-654361 – Locate four (4) soil processing operations related to the landfill for a period of 20 years on the subject site.

These applications involve processing and review by Community Bylaws staff (for the continuation of the soil fill/landfill operations) and Planning staff (for the location of soil processing operations). As these ALR applications are for 2 related aspects of the landfill operation both applications are brought forward for consideration in one report. Both applications require consideration and endorsement by Council, if endorsed, the applications will be forwarded to the ALC for consideration.

Findings of Fact

A Development Application Data Sheet providing details about the development proposal is contained in Attachment 6.

Surrounding Development

To the North: Across the Granville Avenue unopened road allowance, land designated "Agriculture" in the 2041 Official Community Plan and zoned "Agricultural (AG1)".

To the East: Across the No. 7 unopened road allowance, land designated "Industrial" in the 2041 Official Community Plan and zoned "Agriculture (AG1)". This area is under federal jurisdiction (Port Metro Vancouver).

To the South: Across the Blundell unopened road allowance, land designated "Industrial" in the 2041 Official Community Plan and zoned "Industrial (I)". This site is owned by Ecowaste Industries Ltd. who operate a related landfill on the site.

To the West: Across the Savage unopened road allowance, land designated "Agriculture" in the 2041 Official Community Plan and zoned "Golf Course (GC)" and "Agriculture (AG1)".

Related Policies & Studies

2041 Official Community Plan

The subject site is designated for "Agriculture" in the 2041 Official Community Plan (OCP) (Attachment 3). The soil processing operations are temporary land uses and will be removed when no longer required and the long term objective is for the site to be remediated back so that it can support agricultural uses. No amendments are required to the 2041 OCP.

Environmentally Sensitive Area Designation

There is an Environmentally Sensitive Area (ESA) designation that runs along the west edge bordering the subject site within the Savage Road allowance. The proposed landfill activities and soil processing operations are not located within the designated ESA and will not be impacted by the proposal and a Development Permit is not required.

Riparian Management Area Designation

A 15 m wide Riparian Management Area (RMA) exists along the subject site's north and east edges associated with a drainage canal along the Granville Avenue and No. 7 Road allowances. Environmental Sustainability staff have reviewed the proposal and confirm there is no encroachment into the RMA, and no additional approvals are required.

Zoning – Agricultural (AG1)

The subject site is zoned "Agriculture (AG1)". The proposed soil processing activities also will be involved in providing a portion of the necessary soils and fill materials to remediate the closed landfill so that it can support agricultural uses. The landfill and supporting soil processing activities are temporary interim uses, that once closed and removed, will result in the site being capable of supporting land uses and activities that are consistent with the existing "Agricultural (AG1)" zoning.

The landfill site operated by Ecowaste and the 4 sub-contracted soil processing activities are all individual commercial businesses. As a result, each will be required to apply for and obtain the necessary business license(s) from the City if the ALR applications are supported by Council and approved by the ALC.

Related Regulatory Bylaws

If the ALC approves the fill application for the subject site, the applicant will be required to comply with the following bylaws and provide the following securities to the City:

- Boulevard and Roadway Protection Regulation Bylaw 6366, including providing security to the City in the amount of $5,000 pursuant to section 8 (d) of the Boulevard and Roadway Protection Regulation Bylaw 6366 to ensure that roadways and drainage

systems are kept clear of materials, debris, dirt or mud during or resulting from the fill activity.

- Watercourse Protection and Crossing Bylaw 8441, prohibiting the introduction of pollution (such as sediment laden water) to the City's watercourse.
- Soil Removal and Fill Deposit Regulation Bylaw 8094, including depositing a security bond in the amount of $10,000 to the City pursuant to section 4.2 of the Soil Removal and Fill Deposit Regulation Bylaw 8094 to ensure the full and proper compliance with the provisions of this bylaw and all terms and conditions of the soil deposit permit.

Richmond Agricultural Advisory Committee (AAC)

Both ALR non-farm use applications were reviewed by the City's Agricultural Advisory Committee (AAC) a total of three times and AAC comments are summarized as follows (Attachment 11 – Excerpt of all AAC minutes):

- March 13, 2014 – AAC requested additional information from the applicant.
- April 24, 2014 – AAC supported both ALR applications proceeding to Council for consideration.
- November 20, 2014 – Both ALR applications were brought back to the AAC, as new information arose and it was determined that the AAC should be made aware of this additional information. Based on this additional review by the AAC, the following motions were supported by the AAC (note: this decision is different from the approval granted by the AAC on April 24, 2014):
    1. *The relocation of the four soil processing operations that are directly related to the Ecowaste landfill operations be supported on a temporary basis subject to no net increase in fill on the subject site.*
    2. *That a restrictive covenant be recommended to be registered on the other ALR properties in Richmond owned by Ecowaste Industries Ltd. to limit the uses of the properties to agriculture.*

The applicant has submitted the following in response to the latest AAC recommendation on November 20, 2014:

- Both ALR applications (continuation of the landfill and related soil processing operations) are directly related to each other as the soil processing activities will support soil fill and removal activities for the Ecowaste's entire landfill operation (both within and outside of the ALR).
- The applicant notes that the ALR applications are consistent with the current Ministry of Environment approved design, operations and closure plan for the landfill operation.
- Although landfill activities will focus on the Ecowaste's industrial zoned land outside of the ALR (south of Blundell Road) for the next 8-10 years, the landfill site in the ALR will still be used as a temporary landfill site to support the overall operation in addition to the proposed soil processing operations.
- In response to the requested legal agreement by the AAC identifying that other land owned by Ecowaste in the ALR can only be used for agriculture purposes, the applicant submits that existing land use controls (Zoning and ALR regulations) are sufficient and have responded that the any legal agreement would not be necessary and have concerns about the AAC recommending such a covenant over the balance of the applicant's lands in the ALR.

Access Provisions

The subject site, bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances, does not have frontage on an open, constructed public road. Ecowaste owns the properties south of the subject site extending south to Williams Road, which is the main vehicle access.

A constructed public road in the Blundell Road allowance generally between No. 7 Road and Savage Road is proposed as part of Ecowaste's industrial development. Design, City approval and construction of these road works will be completed through a City Servicing Agreement. Once completed, both Ecowaste landfill sites would then have road frontage for access/servicing purposes. Until this occurs, access will continue through private roads on Ecowaste owned properties from Williams Road. To ensure that this access arrangement remains available through all of Ecowaste properties north of Williams Road, a legal agreement will be registered on the title of the appropriate lots that will:

- Cover all Ecowaste owned properties bounded by Williams Road to the south, Savage Road allowance to the west, Granville Road allowance to the north, No. 7 Road allowance to the east and the rail allowance running along the south east edge.
- Identify that all properties within this area cannot be transferred/sold independent of one another.
- Registration of this legal agreement would be required prior to issuance of any Building Permits on the ALR lands north of Blundell Road (Attachment 13).

Background

Project Description – Ecowaste Landfill Operation

Ecowaste Industries Ltd. currently operates an active landfill operation on the subject site. This operation also extends on the lot to the south, across the Blundell Road allowance. This second landfill property is not located in the ALR and is not part of this application. This second landfill operation is designated "Industrial" in the 2041 Official Community Plan and zoned "Industrial (I)" (Attachment 3).

Based on the approved Ministry of Environment design, operations and closure plan for the site, Ecowaste's ultimate finished elevation will be 17 m geodetic at the highest elevation (Attachment 4 – Proposed Landfill Contour Map). The ALR application request to allow the continued operation of the existing landfill activities for a period of 20 years includes the following components:

- Filling of the site with processed soils and inert construction, demolition and excavation waste
- Removal of processed soils from the ALR portion of the landfill for placement on other portions of Ecowaste landfill outside of the ALR on their proposed industrial site.
- Remediate the closed ALR landfill site to an agricultural standard as determined by the ALC.

Project Description – Ecowaste Soil Processing Operations

This ALR non-farm use application proposes to locate three new soil processing activities on the portion of the landfill north of the Blundell Road allowance within the ALR, including an existing soil processing operation (Yardworks/Arrow). There was no Council or ALC approving this operation, and this application includes a request to formally permit this operation on-site.

The four (4) soil processing operations support the activities of the landfill by processing materials before being placed within the landfill (both in and outside of the ALR). The applicant subcontracts soil processing activities to four (4) separate commercial businesses, generally involved in composting, soil processing and production, soil bioremediation and wood waste/organic material recycling (a site plan of the soil processing operations is contained in Attachment 5). These soil processing activities will also support the required remediation of the closed landfill by providing some of the necessary agricultural top soils and underlying suitable agricultural fill required to remediate the site.

Any structures and buildings required to support the soil processing operations are temporary in nature and can be removed easily without any impact to the land.

These soil processing operations would be long-term, but ultimately temporary land uses up to 20 years. The activities must be removed once the ALR portion of the landfill operation is closed in accordance with Ministry of Environment requirements and remediation of the site to a suitable agricultural standard is completed in accordance with ALC requirements.

Previous ALC Approvals

In 1993, the ALC approved the Ecowaste application for a landfill at the site and a City of Richmond soil conservation permit S-271 was issued for five (5) years. In 1998, Ecowaste applied to the City of Richmond and the ALC to extend the permit for a period of ten (10) years. This was approved and the renewed permit expired on June 30th, 2009. A copy of the ALC letter approval is contained in Attachment 7.

The existing Soil Conservation Permit (S-271) expired in 2009. Ecowaste has confirmed that once they became aware of the expiration, they:

- Notified the ALC of the lapsed permit, who advised them to submit an appropriate application and ensure that the terms and conditions of the previous issued permit were being complied with;
- Began exploration of long-term industrial development options for Ecowaste's industrial zoned and designated land, which would ultimately impact the requested time extension for the landfill operating in the ALR.

Ecowaste has applied to further extend the landfill activities for 20 years and has made revisions to the proposed scope of works, including exceeding the maximum elevation requirements (8 m above sea level) contained in the original ALC approval. As a result, this ALR application covering the landfill proposes to align any ALC approvals to be consistent with the current approved Ministry of Environment design, operations and closure plan.

A timeline related to the Ecowaste landfill activities is contained in Attachment 8.

Provincial Permits and Licenses

All of Ecowaste's landfill activities are permitted and regulated through an operational certificate issued by the BC Ministry of Environment (Operational Certificate MR-04922). The current operational certificate regulates the current design, operations and closure plan approved by the Ministry (Attachment 9 – BC Ministry of Environment approval letter). The operational certificate does not specify an expiry date; however, it does require compliance with a specific closure plan for the landfill. Ecowaste is permitted to accept up to 230,000 tonnes of construction, demolition and excavation waste per year at the landfill. The landfill also holds licenses and permits from Metro Vancouver in relation to the landfill operation and composting activities.

Proposed Ecowaste Industrial Development

Ecowaste is currently developing plans for a phased light industrial development located south of the Blundell Road allowance outside of the ALR (Attachment 10 – preliminary site plan). This development proposal is relevant to the ALR applications considered in this report as the continued landfill activity on the industrial development site south of the Blundell Road allowance results in the following:

- Longer time period to complete, close and remediate the landfill on the ALR site.
- Relocation of the soil processing operations (currently located on the landfill south of the Blundell Road allowance) onto the ALR site due to ongoing landfill activities on the industrial site.

Community Bylaws Analysis of ALR Non-Farm Use Application (NF 14-654364) – Landfill Operation

City records confirm that there has been no adverse impact to the community or city infrastructure due to this landfill business being operated by Ecowaste.

The ALC staff have advised that there have been no complaints on this property with regard to the landfill operation and that the property is in compliance with the original authorization from the ALC under the *Soil Conservation Act* and in compliance with the ALC Act.

Staff note that drainage and ground heave do not appear to have been an issue at this site, however the City expects that Ecowaste will continue to manage drainage and leachate as required under the ALC resolution #173/93 and the Ministry of Environment's issued operational certificate.

Ecowaste reports that it has filled approximately 75% of the ALR site (in accordance with the approved BC Ministry of Environment design, operations and closure plan) and the project, as required by the ALC Resolution #173/93, is being overseen by a land reclamation specialist. The ALC Resolution required the submission of semi-annual reports on the landfill operation. The most recent report was submitted by Ecowaste's consultant (Pottinger Gaherty Environmental Consultants Limited) at the end of 2013. This report and subsequent addendum reviewed the overall project and confirmed compliance with previous ALC approvals and conditions (Attachment 12).

If the ALR portion of the landfill site was not permitted to continue filling the remaining 25% of the site, the ability to properly remediate the site to support agricultural activities would be challenging as the site has varied elevations, which would make future implementation and management of supporting agricultural drainage irrigation systems difficult and reduce the overall area of land that could be remediated for farming. The 20 year extension enables the landfill activities and closure plan to be implemented, in order for the site to be remediated back so that it can support agricultural uses.

Planning and Development Analysis of ALR non-farm use application (AG 14-654361) – Soil Processing Activities

Planning and Land Use

The applicant is requesting to relocate soil processing operations from the landfill south of the Blundell Road allowance to the north portion of the landfill in the ALR due to site constraints as they continue fill activities and work towards closure of the landfill on the "Industrial (I)" zoned site.

For efficiency in the ongoing landfill operation, the time-limited (20 year period) temporary relocation of soil processing activities to the north ALR property facilitates effective operation of the landfill, including closure and remediation back to agricultural use.

In response to potential adjacency impacts to surrounding properties, the proponent has confirmed that the soil processing activities will not generate any odours. Dust from access roads will be controlled with water trucks. The proponent has also confirmed that noise will be minimal and all soil processing operations will cease by 4 pm daily.

Financial Impact

None anticipated.

Conclusion

The proposed two ALR non-farm use applications are to:

1. NF 14-654364 – Allow the continued operation of the existing landfill activities for a period of 20 years on the subject site in order to comply with the current design, operations and closure plan approved by the Ministry of Environment (Recent updated approval – November 2013); and
2. AG 14-654361 – Locate four (4) soil processing operations related to the landfill for a period of 20 years on the subject site.

All technical issues related to both ALR non-farm use applications have been addressed. The proponent has identified in the application that plans to develop an industrial park south of Blundell Road has resulted in Ecowaste requiring a further 20 year time period to complete, close and remediate the landfill site in the ALR. The soil processing operations directly support and are ancillary to the landfill activities and will be removed from the ALR portion of the landfill site to enable remediation back to agricultural capability as required by the ALC. Both ALR applications are consistent with the existing Ministry of Environment approval for the landfill site.

Staff recommends that both ALR non-farm use applications be endorsed and forwarded to the ALC to:

1. Allow for the continued existing landfill operation activities for a period of 20 years to achieve a finished elevation as outlined in the current Design Operation and Closure Plan approved by the Ministry of Environment and that this application be forwarded with the recommendation that the Agricultural Land Commission incorporate all of the conditions as specified and contained in its original approval granted under ALC resolution #173/93;

2. Locate four (4) soil processing operations related to the landfill for a period of 20 years on the subject site.

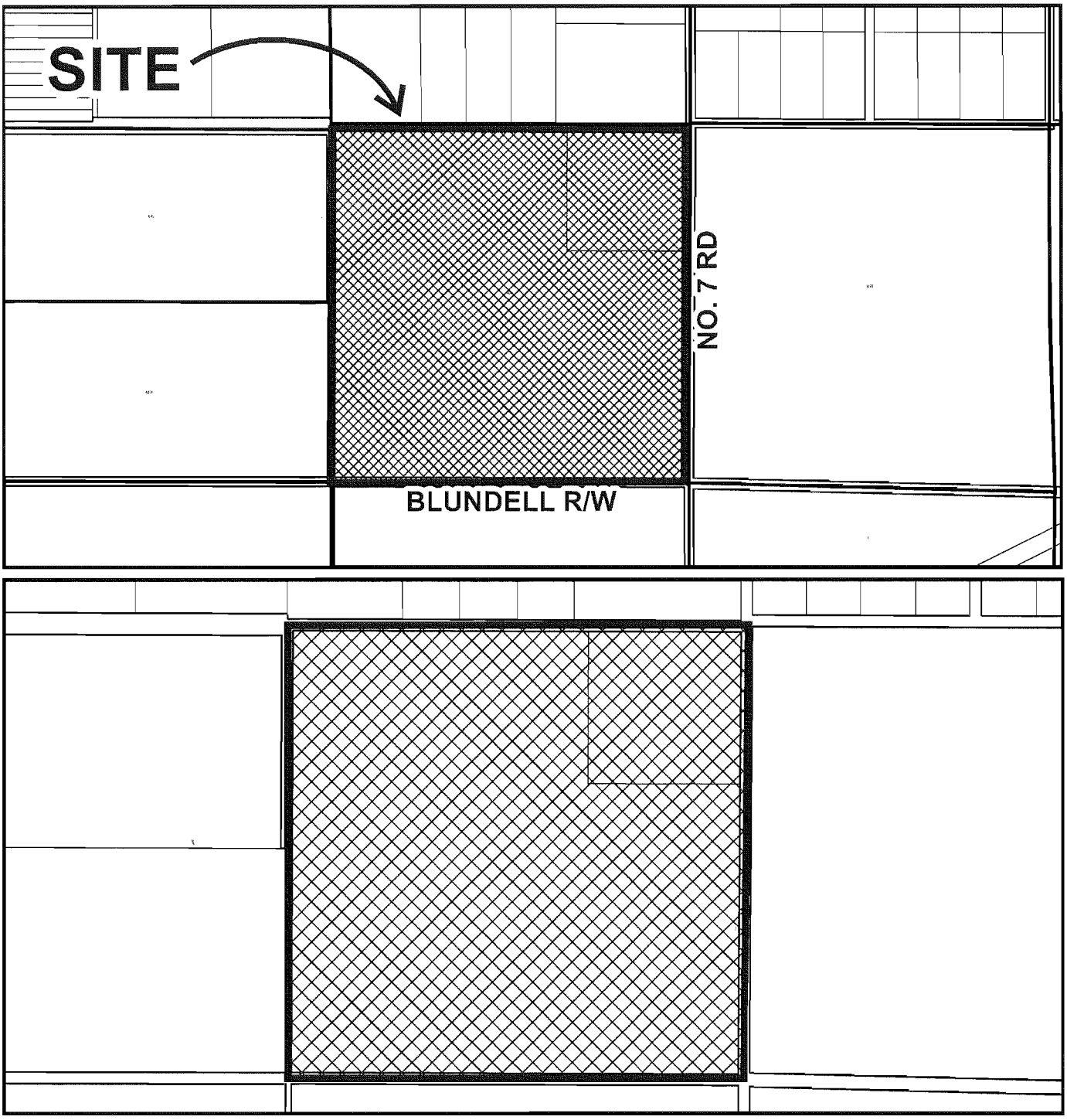
Kevin Eng
Planner 2

Ed Warzel
Manager, Community Bylaws

KE:rg

Attachment 1: Location Map
Attachment 2: Ecowaste Context Map
Attachment 3: Development Data Sheet
Attachment 4: 2041 Official Community Plan Reference Map
Attachment 5: Excerpt of AAC Meeting Minutes (March 13, 2014; April 24, 2014; November 20, 2014)
Attachment 6: Ecowaste ALR Landfill Site – Contour/Elevation Map of Closed/Remediated Landfill Site
Attachment 7: Site Plan – Soil Processing Operations
Attachment 8: ALC Approval Letter (1993)
Attachment 9: Timeline – Ecowaste Landfill Activities in the ALR
Attachment 10: Ministry of Environment Approval Letter – Design, Operations and Closure Plan
Attachment 11: Ecowaste Phased Light Industrial Development Plan (South of Blundell Road).
Attachment 12: Agrologist/Environmental Consultant's Report – Agricultural Remediation
Attachment 13: Building Permit – Legal Agreement Requirement

City of Richmond



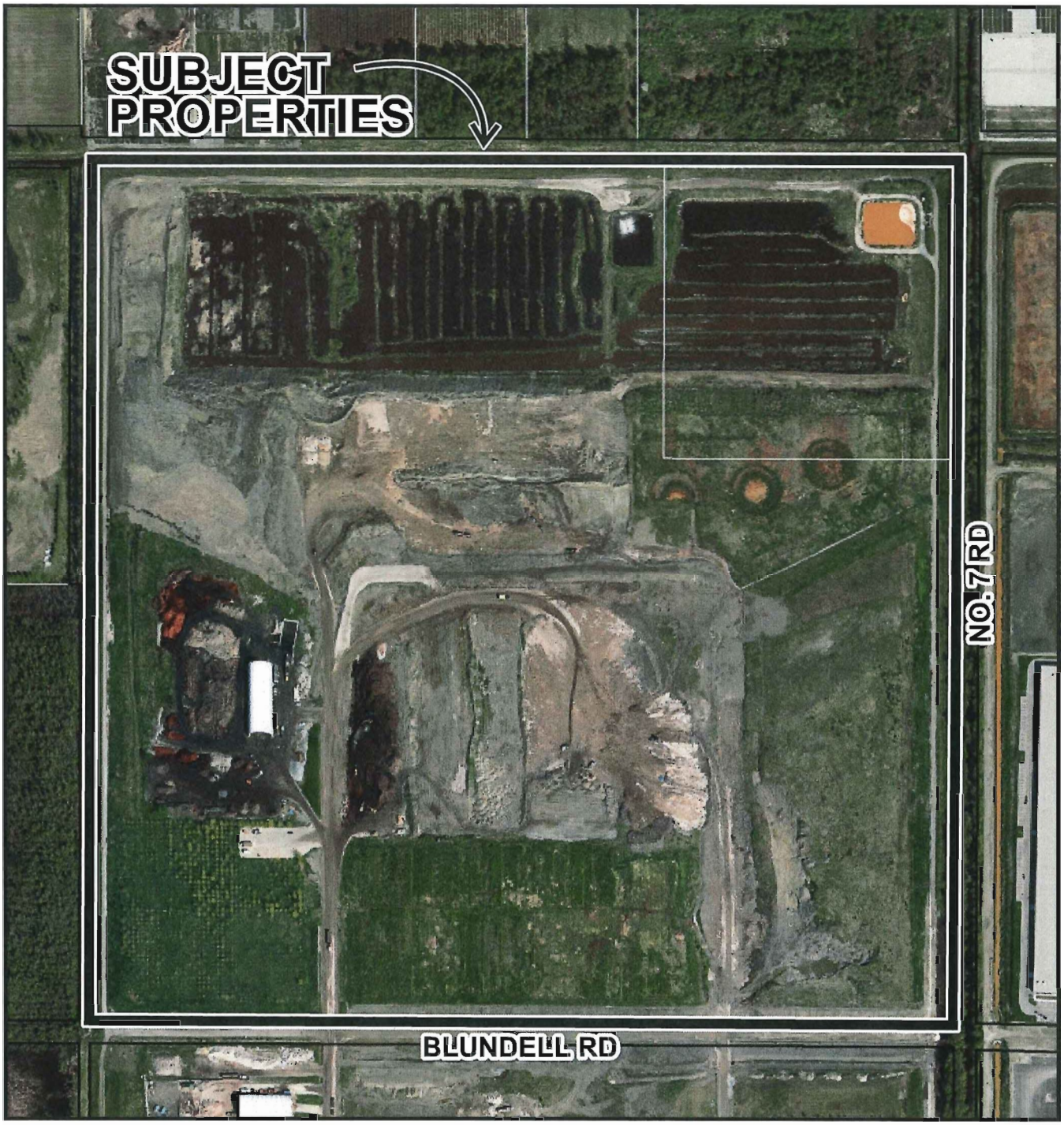
AG 14-654361; NF 14-654364

Original Date: 07/07/14

Revision Date: 02/03/15

Note: Dimensions are in METRES

City of
Richmond



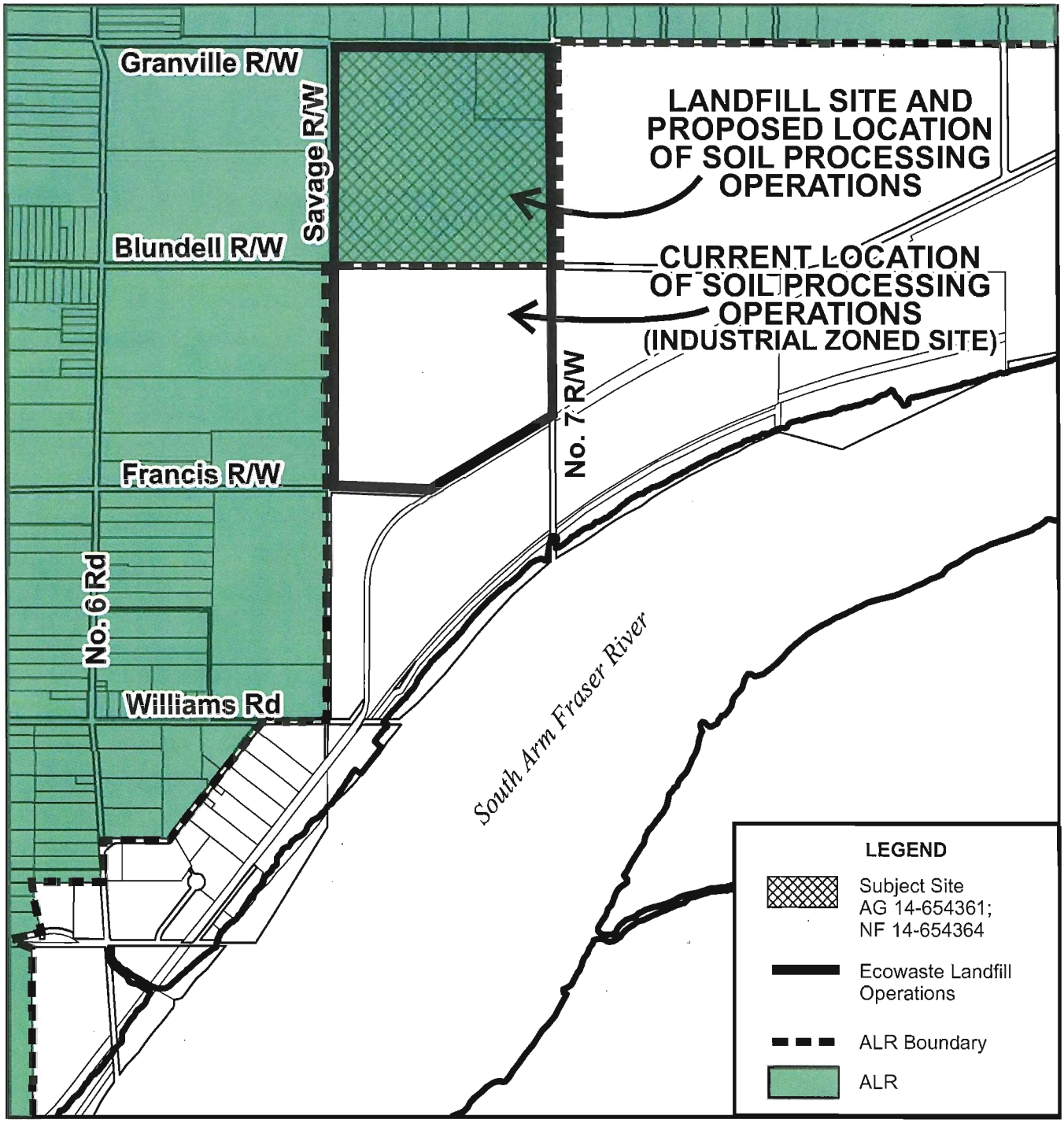
AG 14-654361;
NF 14-654364

Original Date: 02/12/14

Revision Date: 02/03/15

Note: Dimensions are in METRES

City of Richmond



Ecowaste Reference Map: Land Use Context

Original Date: 07/08/14

Revision Date: 02/06/15

Note: Dimensions are in METRES

City of Richmond

Development Application Data Sheet

Development Applications Division

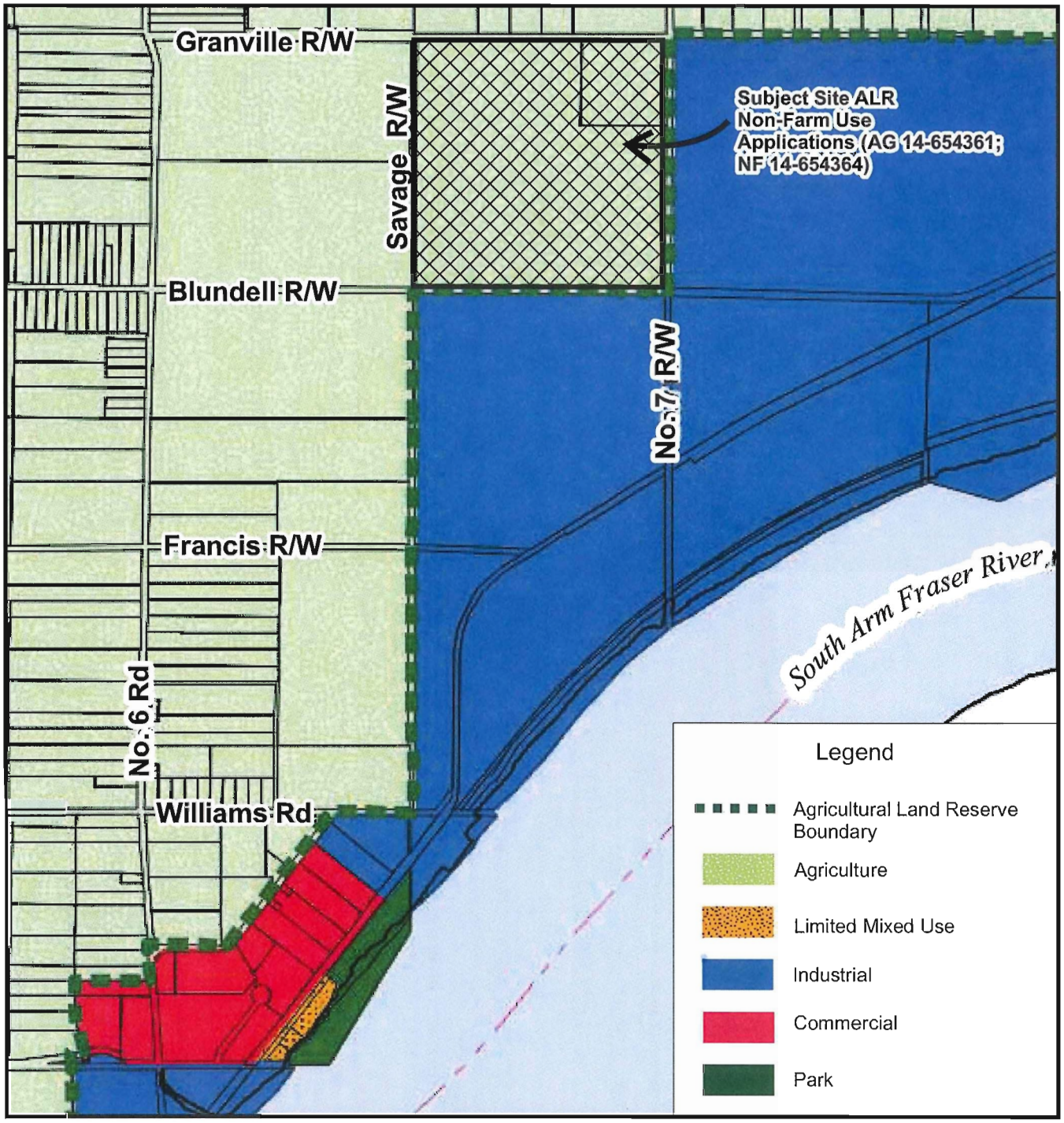
AG 14-654361; NF 14-654364 **Attachment 3**

Location: Lands bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances

Applicant: Ecowaste Industries Ltd.

	Existing	Proposed
Owner:	Ecowaste Industries Ltd.	No change
Site Size (m^2):	150 acres or 60.6 ha	No change
Land Uses:	Landfill activities and related uses in conjunction with partially remediated areas used for woodlot production	• Landfill activities and related uses to remain status quo. • Extend landfill activities for 20 years • Addition of four soil processing operations that directly support the landfill activities.
Agricultural Land Reserve:	The site is contained in the ALR	No change
OCP Designation:	Agriculture	No change
Zoning:	Agriculture (AG1)	Zoning amendment proposed to be brought forward after a decision on the ALR non-farm use application.
Other Designations:	• ESA outside of and along the west edge of the site. • 15 m RMA along the north and east edges of the site	Existing ESA and 15 m RMA designated portions of the site will not be impacted.

City of Richmond



Richmond Official Community Plan Land Use Map

Original Date: 07/08/14

Revision Date: 02/03/15

Note: Dimensions are in METRES

Excerpt of Meeting Minutes – March 13, 2014
Agricultural Advisory Committee

7011 No. 7 Road ALR Non-Farm Use Applications

Staff provided an overview of the two separate ALR non-farm use applications submitted by Ecowaste Industries Ltd. 1) ALR non-farm use application to undertake soil fill/removal requesting to extend the time period for the existing landfill operation operated by the proponent; and 2) ALR non-farm use application to locate soil processing activities related to the landfill on ALR land.

The first ALR application related to the requested extension for the landfill operation on ALR land is related to the redevelopment of the proponent's industrial zoned site outside of the ALR, resulting in an extended time period to complete the filling on the ALR portion of the landfill operation. The applicant is requesting an extension of approximately 20 years to complete soil fill activities and that all activities (total volume, closure of landfill and land remediation to an acceptable agricultural standard) will be in accordance with the original ALC approval granted in 1992.

Committee members had the following questions and comments on the proposal:

- Committee members asked the applicant about options available should the ALR application to extend the fill operations for the landfill site in the ALR not be approved. The applicant advised that due to different site elevations currently on the ALR landfill site, it would be difficult to achieve the level grade needed to undertake farm activities as required in the ALC's original approval. Furthermore, the proponent noted that remediation of the ALR landfill site to a suitable agricultural capability would be challenging if fill activities were no longer permitted.

- In response to questions from Committee members about the current farm activities being undertaken on remediated portions of the ALR landfill site and what would be done as landfill activities shifted to the industrial lands, the proponent identified that agricultural activities consisted of woodlot production and that temporary closure of the ALR landfill site would occur.

- In response to questions about timing, the proponent identified that the reason for the requested extension for filling on the ALR portion of the site was primarily due to fluctuating rates of receipt of waste materials received by the landfill since operation and that the reopening of the landfill on industrial designated lands extended the time period approximately 10 years. The applicant noted that the ALR landfill site is approximately two-thirds completed.

- The proponent and Committee members discussed Ecowaste land holdings in Richmond, including land both within and outside of the ALR. Committee members noted concerns about what would happen to Ecowaste land holdings in the ALR and

if the time extension of the landfill proposal would set an undesirable precedent. In response, the applicant confirmed that there are no plans to undertake additional filling by Ecowaste on ALR lands and that a previous proposal for an 80 acre parcel in the ALR was withdrawn.

- Committee members asked questions about the agricultural capability of Ecowaste's land holdings in the ALR. In response, the proponent noted that the agricultural capability's on each site varied, but some site's had been historically mined for peat while others had low elevations which posed challenges to farming. Committee members questioned whether extensive filling was necessary to undertake farming on site's with lower elevations.

- The proponent confirmed that the current authorization to fill land in the ALR expired in 2010 and that they had been in discussion with the ALC and Ministry of Environment to develop an appropriate request for extension and closure plan based on required ALR land use approvals and Ministry of Environment operational certificate applicable to the landfill activities.

- The proponent noted that the elevation of the landfill site in the ALR will be approximately 15 m. Committee members noted potential concerns about the impacts on drainage to other surrounding farm operations given the significant difference in elevation of the landfill site.

- General discussion ensued about the price of placing materials in the landfill compared to tipping fees associated with illegal dumping activities on farmland.

- One committee member suggested that a covenant be placed on the remaining Ecowaste ALR land holdings that restricted further filling on these parcels. The proponent identified that any proposal to place fill on farm land requires approval through the normal ALR non-farm use application process required to be approved by Council and the ALC.

- General concerns were identified by Committee members about the type of agricultural activities being undertaken on remediated portions of the landfill site (i.e., woodlots) as not being the most suitable or productive of farm activities. In response, the applicant noted that the woodlots provided for additional composting materials, and also assists in leachate management for the landfill activities. It was further noted that the current leachate management provisions operating on the landfill site were not suited to growing food crops currently. However, undertaking food production and other suitable crops on the landfill site once leachate management is completed and/or diverted to an appropriate waste system over the long term may be possible.

- In response to questions about the ownership of Ecowaste Industries, the proponent noted that Ecowaste is owned by Graymont Industries which is a privately owned company based in B.C.

As a result of the discussion, the AAC moved and seconded the following motion:

That the ALR non-farm use application by Ecowaste Industries to extend the permit to place fill and continue operations of the existing landfill on the subject site be referred back to the proponent with direction to provide responses to the following Committee requests:

- *Provide appropriate historical background information and approvals granted by the ALC under the previous Soil Conservation Permit.*

- *Provide elevations of the subject site before filling/landfill activities commenced on the subject site and proposed finished elevations once remediation activities is completed.*

- *Provide information on the elevation of surrounding agricultural properties and an assessment of the impacts of the increased elevation of the landfill site to drainage on surrounding agricultural properties.*

- *For Ecowaste's remaining properties they own in the ALR, request a response from the proponent about the feasibility of registration of a legal agreement on these remaining properties restricting any future filling and/or landfill activities in exchange for allowing the request to extend filling activities on the existing landfill operation in the ALR for an additional 20 plus years.*

- *Provide information from the proponent about contingencies for the landfill site should the ALR non-farm use application to extend the fill activities not be approved.*

Carried Unanimously

Staff provided a brief summary of the second related ALR non-farm use application to locate 4 soil processing operations (contracted out by Ecowaste) on the ALR portion of the landfill site. It was noted that the soil processing activities were critical to the overall operation of the landfill both in and outside of the ALR and that the existing Operational Certificate issued by the Ministry of Environment permitted the soil processing activities. 4 of the soil processing activities are currently located on the industrial zoned land with 1 operation currently located on ALR portion of the landfill. The proposed reopening of the landfill on the industrial zoned site south of Blundell Road and ultimate plans to redevelop this site to a warehouse/light industrial complex are the reasons for the relocation of these activities to the ALR portion of the landfill site.

In response to questions, the proponent clarified that the existing location of the soil processing activities is based on the site's operation as a landfill and not because of the industrial zoning/land use designation for land south of Blundell. The proponent also provided information on the type of activities that the soil processing operations undertake to ensure that materials placed in the landfill are processed and remediated to an acceptable standard before being placed in the landfill. The proponent also clarified that the soil processing activities proposed for the ALR portion of the landfill are temporary land uses,

which would be removed once the landfill activities are complete and the land remediated back to a suitable agricultural standard as specified in the original ALC's approval.

Based on the discussion and the previous referral of the first ALR non-farm use application (soil fill associated with the landfill), the AAC moved and seconded the following motion:

That the ALR non-farm use application proposing to locate 4 soil processing operations on the ALR portion of the landfill be tabled until such a time when the previously referred ALR non-farm use application (soil fill associated with the landfill) is ready to be brought forward to the AAC for consideration.

Carried Unanimously

Excerpt of Meeting Minutes – April 24, 2014
Agricultural Advisory Committee

7011 No. 7 Road ALR Non-Farm Use Applications

Kevin Eng (Policy Planning) provided an overview of the two separate ALR non-farm use applications submitted by EcoWaste Industries Ltd. The first application is for an ALR non-farm use to undertake soil fill/removal requesting to extend the time period for the existing landfill operation operated by the proponent. The second application is for an ALR non-farm use application to locate soil processing activities related to the landfill on ALR land.

Mr. Ned Pottinger, representing the proponent, made a presentation that addressed questions brought up by Committee members from the March 13, 2014 AAC meeting. The presentation included a summary about EcoWaste, and a historical background about their landfill operation. The presentation noted current farm activities on the site and summarized their two non-farm use applications.

Committee members were asked to consider a separate motion for each non-farm use application.

Committee members had the following questions and comments on the first non-farm use application proposal:

- Committee members asked how this soil deposit permit application compares to other applications made to the City. Staff explained that this application is unique in that it received authorization from the Province to deposit soil more than 20 years ago. A similar application made today would likely be processed differently, and may not necessarily be approved.

- Committee members asked if this type of application would be approved today. Staff indicated that this application is essentially a continuation of a non-farm use application that was approved in 1993 under the previously repealed Soil Conservation Act. The applicant would have a number of conditions to fulfill when the landfill is complete to ensure that the land can be farmed.

The following motion was moved and seconded by Committee members:

That the Agricultural Land Reserve non-farm use application by EcoWaste Industries to extend the permit to place fill and continue operations of the existing landfill on the subject site proceed to Council.

Carried (5 members in favour; 1 member opposed)

Committee members had the following questions and comments on the second non-farm use application proposal:

- Committee members asked if it is feasible to move the soil remediation operations that are part of the second non-farm use application to another site that is not in the ALR. The applicant indicated that they need the soil remediation operations on site to continue with the operations of the landfill. It would prevent contaminated soil being buried and it reduces the number of truck traffic by having the operations on site.

- Committee members asked if the agricultural land will be compromised due to the non-farm uses. The applicant indicated that it would not as the uses have linings and, in some cases, they are double lined to ensure the soil is not contaminated. The applicant also noted that once the landfill is closed an additional layer of soil will be added.

The following motion was moved and seconded by Committee members:

That the Agricultural Land Reserve non-farm use application by EcoWaste Industries to locate 4 soil processing operations on the ALR portion of the landfill site proceed to Council.

Carried (4 members in favour; 2 members opposed)

Excerpt of Meeting Minutes – November 20, 2014
Agricultural Advisory Committee

Development Proposal – ALR Non-Farm Use land bounded by Blundell, Savage, Granville and No.7 (Ecowaste Industries)

Tom Land from Ecowaste Industries Ltd. provided a PowerPoint presentation that included background information about the company, information on three other ALR properties owned by the company and a brief overview of the two non-farm use applications before the AAC. The applications are: 1) to extend the time period (20 years) for the existing landfill operation and increase the elevation of the fill to 18 m and 2) to locate soil processing activities related to the land fill operation on the site. Mr. Land noted that the AAC previously reviewed both applications and recommended that they proceed to Council. However, after further review by staff and the proponent, it was identified that the proposal also involved a request to increase the ultimate elevation of the landfill site from 8m (previously approved by the Agricultural Land Commission) to 18m and the proposal with updated information was being forwarded to the AAC for review and comment.

Ecowaste has been operating under an operational certificate issued by the Ministry of Environment (MOE), which identifies in the approved design, operations and closure plan an 18 m elevation. The proponent worked on the assumption that the 18m elevation was also approved by the ALC, but it was never ratified by the ALC. The originally approved elevation by the ALC in 1993 was 8 m. The proponent noted that the current elevation of the site varies but the highest point was already approximately 16m and the discrepancy was due to administrative oversight. The 18 m elevation is what is required based on the current design, operation and closure plan. The proponent indicated that the increased elevation would not have any impact on the ALC requirement to remediate the site and agricultural capabilities.

AAC members had the following questions and comments:

- Committee members requested clarification on how the discrepancy was not identified for such a long time and why the ALC approval specified 8m instead of 18m.

- The proponent's consultant clarified that the approval letter from the ALC did not specify the 8 m elevation but noted "as submitted" and the plans submitted to the ALC showed 8 m. The proponent noted that the existing elevation was already above the approved line (i.e., 8m).

- Committee members asked why filling was required. The proponent explained the filling was required because due to the proponents overall plans to fill the landfill in the ALR in accordance with the approved design, operations and closure plan and industrial related development plans for the landfill site located south of the Blundell Road allowance outside of the ALR..

- In response to the Committee's question, the proponent confirmed that soil processing activities would be temporary accessory uses until the landfill operations in the ALR cease and the site is remediated.

- Committee members asked if there are any future plans for the other ALR properties owned by Ecowaste. The proponent noted that no specific plans had been identified but the radio tower from one of the sites had been removed. One of the sites has been historically mined for peat but can potentially be used for agriculture.

- Committee members noted that no permanent buildings should be allowed other than temporary buildings.

- Committee members asked what happens after the landfill activities cease and how the activities would be monitored. The proponent clarified that they were obligated to report to the MOE and specialists were on board to monitor the activities.

- Councillor Steves provided the background/history of the ALR designation and use of the subject site, which at the time was low lying land due to previous peat extraction activities that posed significant challenges to farm the property. These on-site conditions were noted as contributing factors in the ALC's decision to allow a landfill operation on the ALR site.

- Committee members expressed significant concerns regarding the future of the other ALR properties, rather than the current use of the subject site as the land was not productive.

- Clarification was requested regarding the access route to the site. Committee members asked whether the Blundell road allowance between the ALR and industrial land would be used for this operation. The proponent clarified that most traffic would be from the east and the City is also keen on not having truck traffic on Steveston Highway.

- Committee members also expressed concerns about the administrative gap and the lack of proper monitoring. It was also questioned why the activities continued until 2013 when previous approvals expired in 2010. The proponent clarified there was an issue related to management and transition. Committee members noted that the approval should be subject to proper monitoring.

- One member suggested that the Committee support the application with no net increase of fill. Ecowaste noted that the no net increase would be problematic and challenging based on the current operation model and plan.

- Committee members said they were reluctant to support the proposal for the whole 20 years and wanted the proponent to come back for further review and approval for the time extension and fill related components of the proposal.

- Committee members also suggested that a covenant be placed on the other ALR properties owned by Ecowaste as a condition of the approval of the two non-farm use applications to ensure that the other properties would be secured for agriculture uses.

- Discussion ensued regarding the covenant requirement and the temporary approval. The proponent noted that the uses of the other ALR properties would be restricted by existing ALC regulations and zoning and any non-farm use proposals would be subject to the normal ALC review process.

The following motion was tabled:

1. *The relocation of four soil processing operations that are directly related to the Ecowaste landfill operations be supported on a temporary basis subject to no net increase of fill on the ALR site.*

2. *That a restrictive covenant be recommended to be registered on the other ALR properties in Richmond owned by Ecowaste Industries Ltd. to limit the uses of the properties to agriculture.*

Carried - Six in favour; two(Doug Wright and Bill Zylmans) abstained

CNCL - 129

ATTACHMENT 6

2 Elevations Based on the 2006 Closure Plan

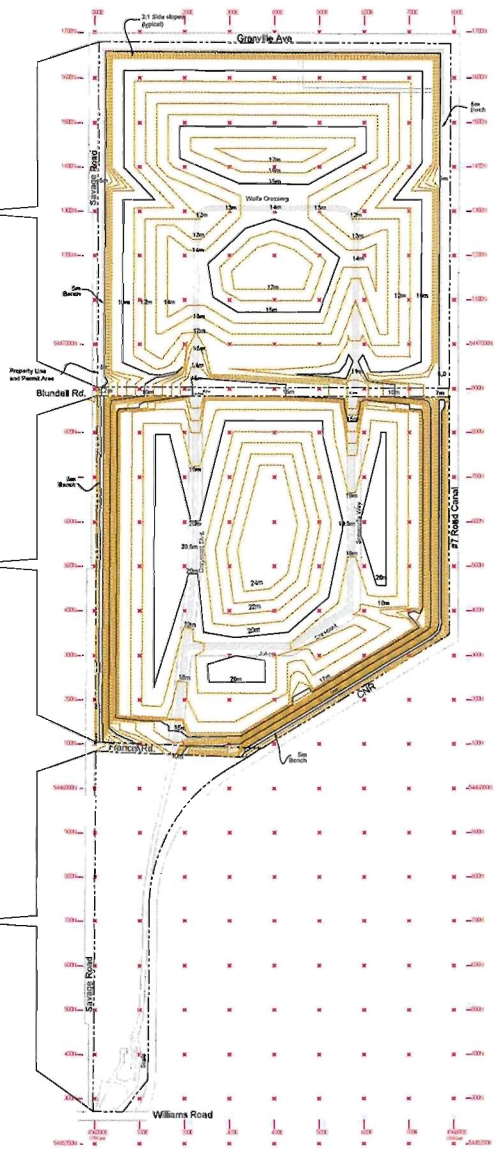
Northern Area - Zoned Agricultural. DLC Wastes and (CSR) Agricultural Soils Used for Cover

Southern Area - Zoned Industrial. DLC Wastes and (CSR) Industrial Soils Used for Cover

Southern Panhandle - Zoned Industrial. DLC Wastes Allowed but Currently only (CSR) Industrial Soils Buried

Ecowaste Landfill Showing Proposed

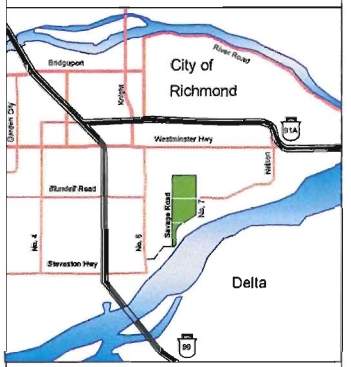
1 Elevations Based on 2013 Closure Plan



ECOWASTE

Ecowaste Industries Ltd,
200 - 10991 Shellbridge Way
Richmond, BC, V6X 2C6

Ecowaste Landfill,
15111 Williams Road
Richmond, BC
Operational Certificate MR - 04922



GNH Engineering Ltd
Landfill Management

2	10/15/2013	2006 closure contours added
1	09/30/2013	Re-issued for review by the Ministry of Environment and others
0	01/10/2013	Issued for review by the Ministry of Environment and others

Landfill Geometry Update 2013

2006 and 2013 Elevation Contours

Drwn by: GNH	Scales based on 24" X 36" Sheet Size	Sheet #2	
Chk'd by: TPH	Scale: 1:5000	October 15, 2013	Revision 2

CNCL - 130

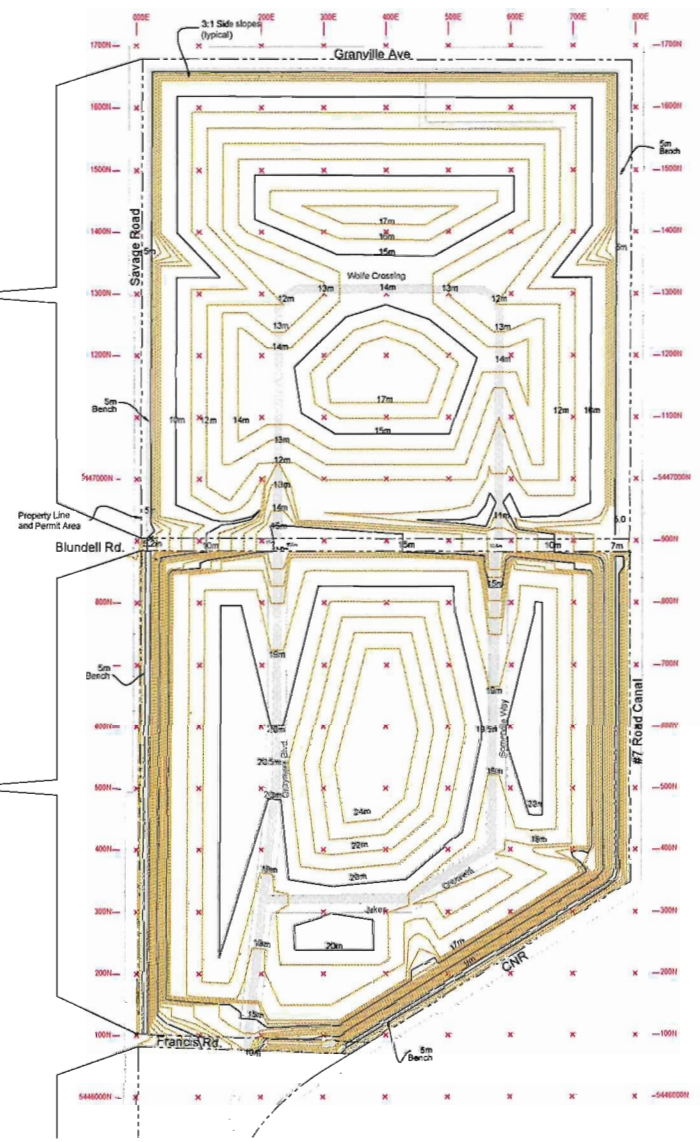
Ecowaste Landfill Showing Proposed

△2 Elevations Based on the 2006 Closure Plan

Northern Area -
Zoned Agricultural.
DLC Wastes and (CSR)
Agricultural Soils Used for
Cover

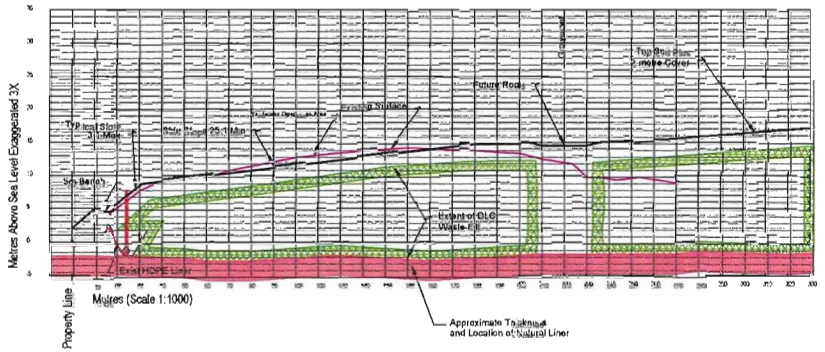
Southern Area -
Zoned Industrial.
DLC Wastes and (CSR)
Industrial Soils Used for
Cover

△1 Elevations Based on 2013 Closure Plan

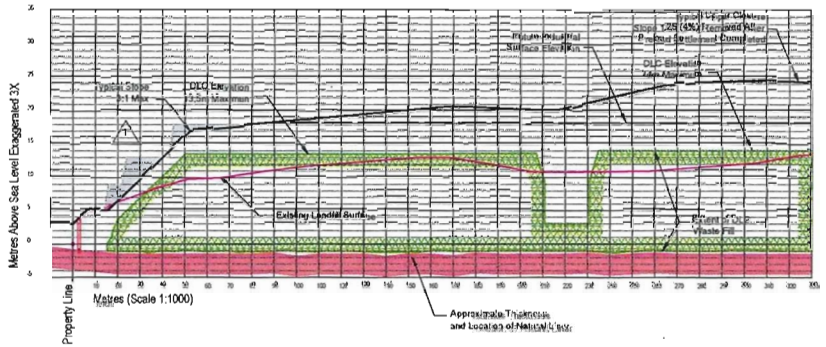


CNCL - 131

Detail A - Northern Area Section

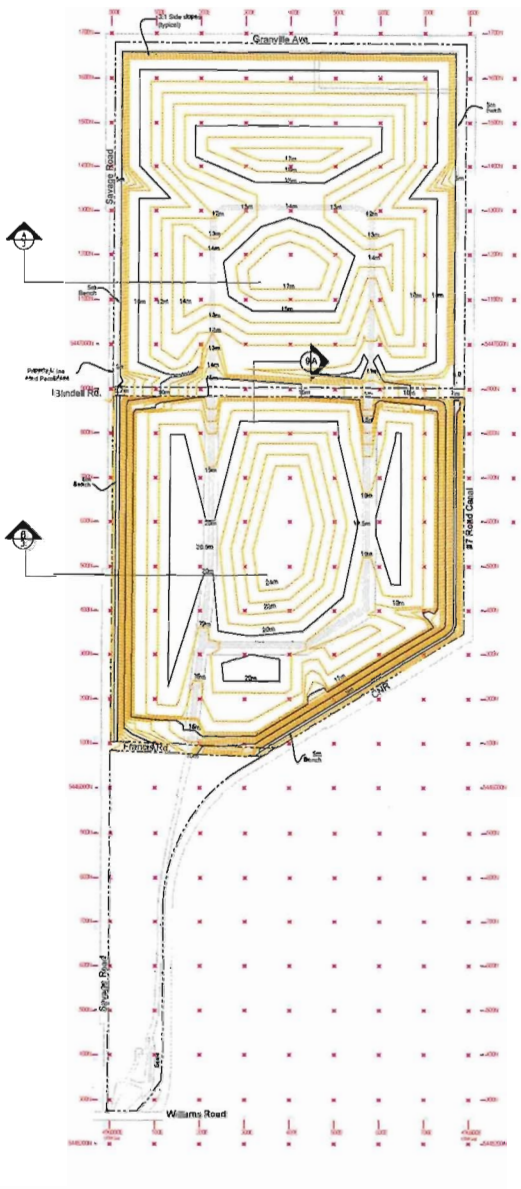


Detail B - Southern Area Section



1 Sierra will to be constructed after closure. Closure surface and DLC height will be adjusted accordingly.

Ecowaste Landfill Showing Proposed Closure Elevations and Features



ECOWASTE

Ecowaste Industries Ltd,
200 - 10991 Shellbridge Way
Richmond, BC, V6X 2C6

Ecowaste Landfill,
15111 Williams Road
Richmond, BC
Operational Certificate MR - 04922

PRELIMINARY
NOT FOR CONSTRUCTION

GMH Engineering Ltd
Landfill Management
Consultants

1	08/30/2013	Re-issued for review by the Ministry of Environment and others
0	01/10/2013	Issued for review by the Ministry of Environment and others

Landfill Geometry Update 2013

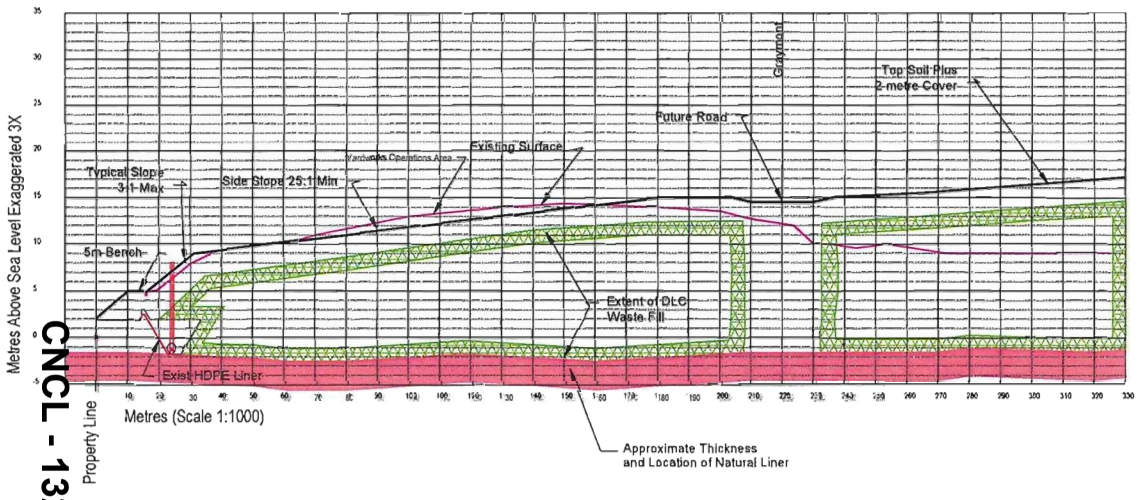
2013 Closure Plan, NW & SW Sections

Drawn by: GNH	Plotted based on 8"X24" Sheet Size	Sheet #3	
Chkd by: TPH	Scale: 1:500	August 30, 2013	Revision 1

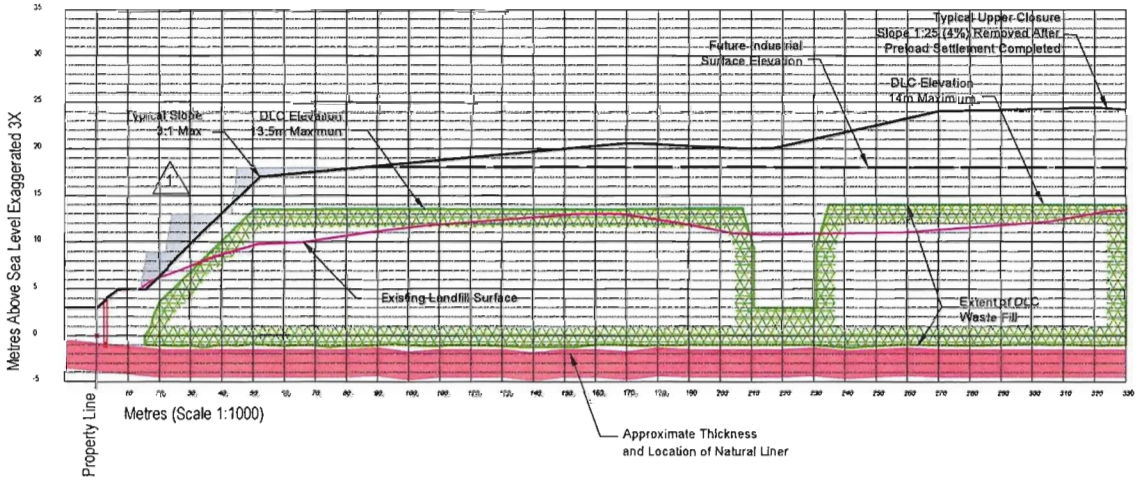
CNCL - 132

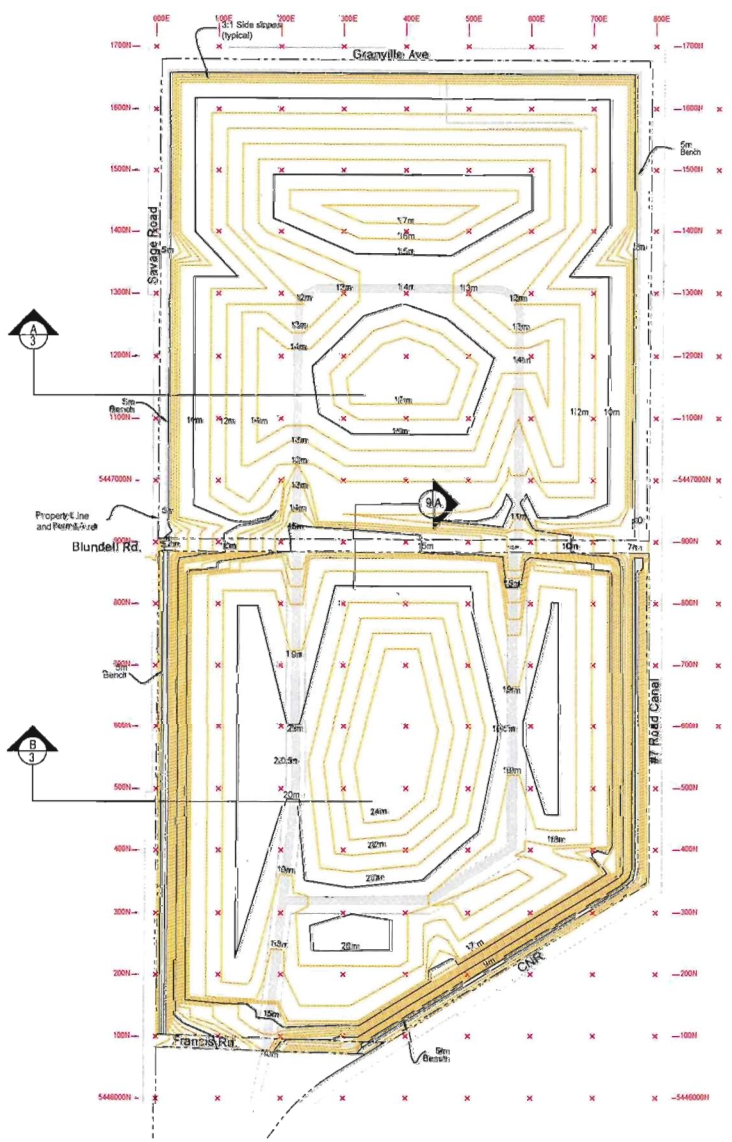
Ecowaste Landfill Showing Proposed Closure Elevations and Features

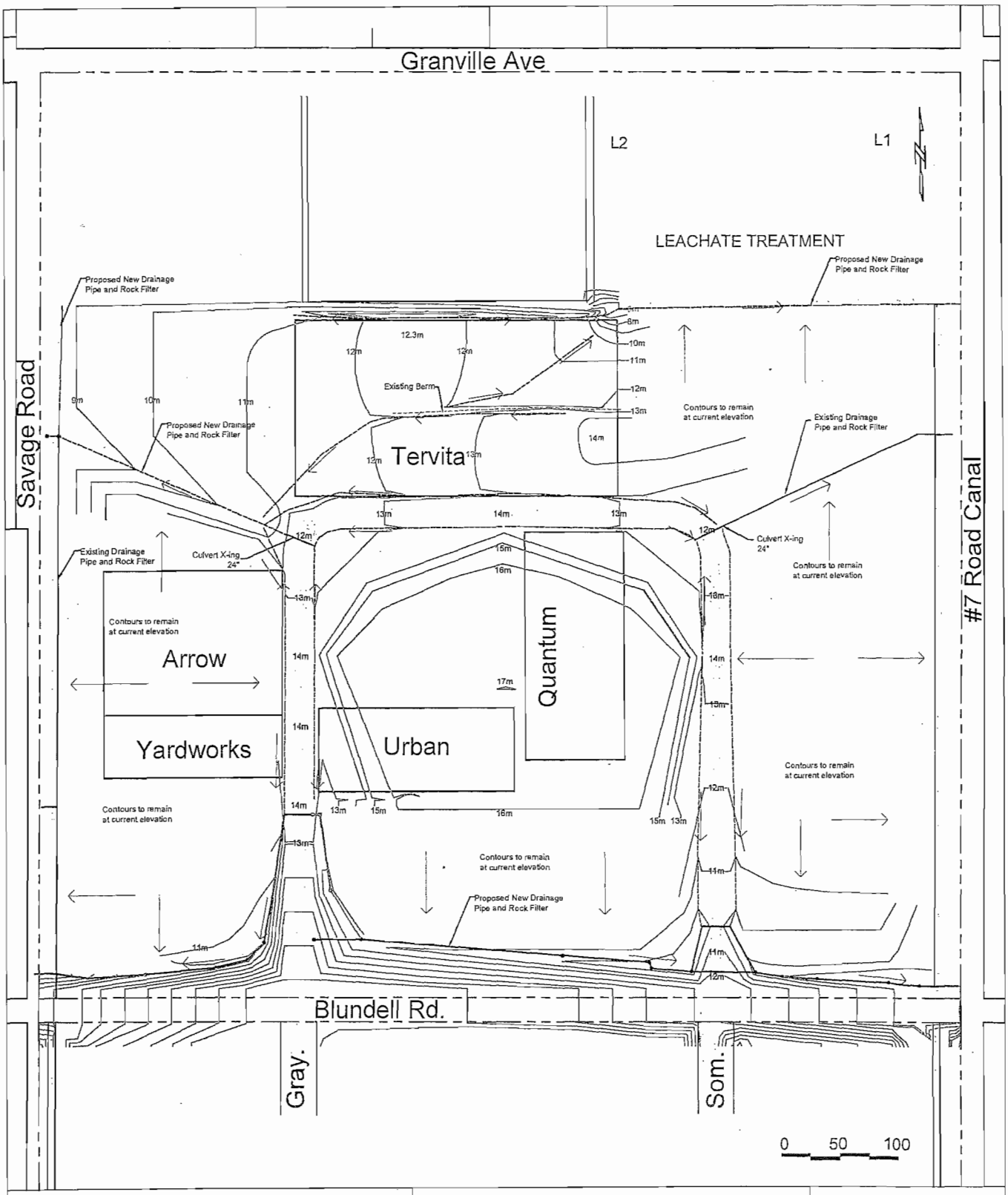
Detail A - Northern Area Section



Detail B - Southern Area Section







EcoWaste Industries
Application to
Agricultural Land Reserve

Date: May 10, 2013
Rev: 0

Sketch

27166

April 23, 1993

Reply to the attention of
Colin Fry

City of Richmond
6911 No. 3 Road,
Richmond, B.C.
V6Y 2C1

Attention: Mr. R.J. Lang

Dear Mr. Lang:

Re: Soil Conservation Act Application #30-0-RICH-92-27166
Applicant: Ecowaste Industries Ltd.
Your File: S-271

This is to advise that the Provincial Agricultural Commission has considered the above application submitted by Ecowaste Industries Ltd. for land described as:

Firstly: Lot "B", Section 15, Block 4 North, Range 5 West, New Westminster District, Plan 19680, and;

Secondly: Lot "A" (RD 93193-E), Section 15, Block 4 North, Range 5 West, New Westminster District, Plan 2799.

Pursuant to Section 2(a) of the Soil Conservation Act, the Commission, by Resolution #173/93 has allowed peat extraction and the deposition of fill to be undertaken on the above described parcels.

This approval is subject to the following conditions:

1.0. LOCATION

All filling and associated activities are to be restricted to the area designated on Map No. 1.

2.0. TERM

This approval shall be valid for five (5) years from the date of issuance of the permit by the City of Richmond.

3.0. BONDING

A performance bond in the form of a Letter of Credit or Certified Cheque or Canada Savings Bonds in the amount of $125,000.00 is to be posted with the Commission. A permit may not be issued by your office until the Commission has confirmed receipt of the bond.

...2

4.0. GENERAL OPERATING CONDITIONS

1) All aspects of the peat removal, filling and reclamation are to be overseen by a Land Reclamation Specialist. The Reclamation Specialist should be a member in good standing with the B. C. Institute of Agrologists and must have specialized in Soil Science, or a similar earth science, with academic credits in the areas of geomorphology, soil genesis, soil classification, soil physics, drainage and irrigation. The Reclamation Specialist shall act as liaison with the Commission Staff Agrologist on technical matters, clarification of the conditions of this approval and be responsible for maintaining up to date reports on all aspects of the operation.

2) Prior to the commencement of any works, the Commission must be notified of the name of the Land Reclamation Specialist. Confirmation from the Land Reclamation Specialist must also be provided to the Commission.

3) There is to be no movement or manipulation of soil, which is to be used for reclamation, during conditions of adverse soil moisture content. The movement or manipulation of the soil is to be conducted only when the soil is below field capacity.

4) Surface drainage from the working, filling and rehabilitated areas shall be controlled at all times to prevent erosion, flooding, siltation or other degradation of the subject property, adjacent lands, ditches or waterways.

5) All run-off shall be diverted into catchment ponds or silt traps prior to discharge from the property into adjacent ditch systems.

6) Weed control is to be practiced at all times. Weeds must be controlled before seed set and Canada Thistle before flowering. Mechanical and/or approved chemical control is acceptable.

7) Under no circumstances is any cedar hog fuel or any other form of cedar woodwaste to be brought onto the property.

8) The fill permit is to be posted at a prominent location and be clearly visible.

9) The property is to be secured in such a manner as to prevent unauthorized deposition of fill. Also, an unobstructed sign is to be posted on the property at a prominent location prohibiting unauthorized deposition of material.

...3

5.0. SITE PREPARATION AND FILLING

1) Filling is not to occur within .75 meters of any legal property boundary.

2) The fill material shall consist of inert industrial wastes such as construction demolition and natural land clearing materials which have been crushed or partially processed, concrete, brick, wood, plastic and similar material. No domestic wastes, putrescibles or other polluting wastes are to be deposited on the property.

3) Each load of fill material is to be inspected on site prior to being deposited on the property.

4) The fill is to be placed in lifts not exceeding 1.0 meter, and compressed.

5) All filling, including the manufactured topsoil required for reclamation, is not to exceed a maximum depth of 6.0 meters above the original ground level, or 8.0 meters above sea level.

6) Prior to any filling, all remaining peat within each phase is to be removed.

7) Any peat remaining on the property is to be stockpiled in storage berms.

8) The sideslope of each storage berm is not to exceed a uniform and stable slope of 2:1.

9) As a method of erosion and weed control, each storage berm shall be seeded with an appropriate cereal or forage mix and fertilized.

10) The soil surface of a storage berm shall not remain bare for more than 30 days without providing either a vegetative or mulch cover of straw or shavings.

11) The excavated peat may be used as part of the composting operation and sold provided 20% of the excavated peat remains on the property for reclamation. This peat material is to be composted to the humic state (no sign of coarse fiber remaining) and incorporated into the final upper 30 cm of topsoil mixture.

12) The entire property is to be perimeter diked to the height of the final elevation of the fill.

13) The top of the dike is to be a minimum of 2.5 meters in width but not to exceed a maximum width of 5 meters. The dike may be used as a perimeter road.

...4

14) Outer sidewall slopes of the dike shall not exceed a maximum slope of 2:1, while inner sideslopes of the dike are not to exceed a maximum slope of 1:1.

15) Peat extraction, filling and reclamation is to be carried out on a progressive basis in six (6) equally sized phases.

16) The project shall begin with phase 1, located in the northeast corner of the property and proceed in an orderly manner to the next phase.

17) Each new phase must be located adjacent the previous phase. The project shall proceed to completion in this manner.

18) Excavation and filling of a new phase shall not proceed beyond 20% of completion until:

i) The previous phase is completely reclaimed to either the specified agricultural use, or a forage cover has been established.

ii) The location of the next adjacent phase is identified.

iii) The final agricultural use of the next phase has been determined.

6.0. REHABILITATION OF THE FILLED AREA

1) Upon completion of filling each phase with the approved materials, the fill is to be capped with a minimum of 1.0 meter of medium textured glacial till material.

2) The glacial till capping shall be placed over the fill in 0.5 meter lifts and compacted.

3) Upon completion of spreading and compacting the capping, a minimum of 0.8 meters of medium textured sands are to be placed over the capping.

4) As a method of increasing the available water storage capacity (A.W.S.C.) of the sand, the final upper 30 cm is to have a texture of loamysand. This will involve the incorporation of between 15% to 30% of silt into the sand. No soil with a texture of silty clay loam or finer is to be used as a soil amendum to increase the A.W.S.C. of the sand.

...5

5) The Commission encourages the backhauling of good quality agricultural soil for rehabilitation purposes provided;

   i) the soil material is of mineral origin only,

   ii) the soil material is not to contain any coarse fragments, including particle sizes greater than coarse sand to 2.5 cm dia.

   iii) the texture of the soil is no coarser than loamysand or finer than siltloam.

6) A suitable organic matter shall be applied to the upper 30 cm of reclaimed soil at a rate of 10 tonnes/hectare dry weight. This organic matter may be added in the form of animal manures or a cereal or forage cover crop turned into the soil. Incorporation of the compost material produced on the property may be used as the organic supplement, provided the composted organic material has decomposed to the humic state and no sign of fiber remains. Sawdust and other woodwaste materials are not considered suitable organic matter supplements.

7) If no immediate agricultural use is to be made of each phase, upon completion of all aspects of rehabilitation, a seedbed is to be prepared and the rehabilitated areas are to be seeded to an appropriate cereal or forage mix and fertilized. The application rate and type of cereal or forage seed mix and fertilizer mix is to be determined by the Reclamation Specialist.

8) The improved agricultural capability rating, with irrigation, of the rehabilitated soil is to be Class 2A when all works have been completed.

7.0 DRAINAGE CONTROL AND DRAINAGE SYSTEM INSTALLATION

1) Upon completion of all aspects of reclamation of each phase and prior to establishing any multi-year crop other than forage and prior to 20% completion of the next phase, a subsurface drainage system is to be installed.

2) The drainage system shall be installed in accordance with the plans shown on Figure No. 1. and as described in the Drainage Notes attached as Schedule No. 1.

3) All aspects of installation of the subsurface drainage system are to be overseen and supervised by either a Drainage Specialist or the Land Reclamation Specialist.

...6

4) Installation shall be by way of a trenchless plow or chain type trencher equipped with automatic depth and grade control using laser alignment technology.

5) The central collector shall be installed in phases, east to west down the centre of the the property and installed with depths and grades allowing it to be extended through each successive phase.

6) Laterals shall be installed with 100 mm diameter perforated corrugated polyethylene pipe (Big "O") at maximum 15 meter interval spacings, with the minimum invert elevation at 1.0 meter below the soil surface.

7) Lateral pipes shall be connected to the buried east-west mainline collector and backfilled with gravel.

8) The outlet of the collector shall be located to ensure the water outfall is carried away into either the No. 7 Road ditch to the east and/or the Savage Road ditch to the west.

9) Appropriate erosion control and siltation control measures shall be undertaken at all collector outlets prior to discharge into the local ditching system.

8.0. IRRIGATION INSTALLATION

1) Upon completion of all aspects of extraction, filling and reclamation of each phase, an irrigation system shall be installed in a manner as shown on Figure No. 2 and described in the Irrigation Notes attached as Schedule No. 2.

2) All aspects of installation of the irrigation system shall be overseen by either the Reclamation Specialist or an Irrigation Specialist.

3) The irrigation system shall consist of a mainline running east to west through the centre of the property and installed in conjunction with a service road.

4) The mainline shall be installed in a manner allowing it to be lengthened through each successive rehabilitated phase.

5) Hydrants shall be located every 60 meters, located in pairs on either side of a service road to allow for six (6) wheel move units, one for each phase.

...7

6) Each wheel move unit is to be designed to have sprinkler head overlap of 50%.

7) An irrigation pumphouse is to be located on the eastern side of the property to use the No. 7. Road ditch as an irrigation source and is to have sufficient capacity to operate all six (6) wheel move units.

9.0. REPORTING AND MONITORING

1) The project will be subject to on-going and regular monitoring by the Commission and the City of Richmond.

2) The Reclamation Specialist shall monitor the operation on a regular basis and shall submit semiannual reports (every six (6) months from the date of issuance of the Soil Placement Permit by the City of Richmond) to the Commission Staff Agrologist, identifying dates of field inspections and describing the progress of the extraction operation. These reports are required to ensure compliance with all the conditions of the Commission's approval.

3) Any changes to the operation not addressed in the approval are to be made through the Commission Staff Agrologist, by the Reclamation Specialist, provided the changes do not alter the intent of the Commission approval.

Furthermore, if the applicant has not completed the project within the specified time period, then an appropriate extension of time may be granted. More specifically, an extension may be granted for this application if there are no changes to the original approval and the operation is in compliance with the local bylaws and Agricultural Land Commission conditions.

The land is still subject to the provisions of the Agricultural Land Commission Act and Soil Conservation Act, as well as the regulations thereto except as provided by this approval.

This approval in no way relieves the owner or occupier of the responsibility of adhering to all other legislation, including zoning, subdivision and other landuse by-laws of the City of Richmond and decisions of responsible authorities which may apply to the land.

Please obtain the confirmation of the Commission, if, in the process of subsequent approvals, and substantial changes are required to the proposal as approved by this office.

....8

It should be pointed out that the approval from the Commission does not constitute unconditional approval for a permit under the Soil Conservation Act. You, the local authority, must fulfill the responsibilities imparted to it in the Act and regulations. If you are satisfied that a permit under the Soil Conservation Act should be issued, please send a copy of the permit to the Commission and all other relevant documents in your custody not presently filed with the Commission relating to this application.

Please quote application #30-O-RICH-27166 in any future correspondence.

Yours truly,

PROVINCIAL AGRICULTURAL LAND COMMISSION

Per:

K. B. Miller, General Manager

CF/lv

cc: Ecowaste Industries Ltd.
14431 River Road, Richmond, B.C. V6V 1L3
Khevin Development Services Ltd.
#270 - 601 West Cordova Street, Vancouver, B.C. V6B 1G1
Ministry of Environment, Lands and Parks,
Waste Management Branch - Surrey
15326 - 103A Avenue, Surrey, B.C. V3R 7A2
B.C. Assessment Authority - Delta

Map No. 1.

Application #30-O-RICH-92-27716
Applicant: Ecowaste Industries Ltd

LOCATION MAP

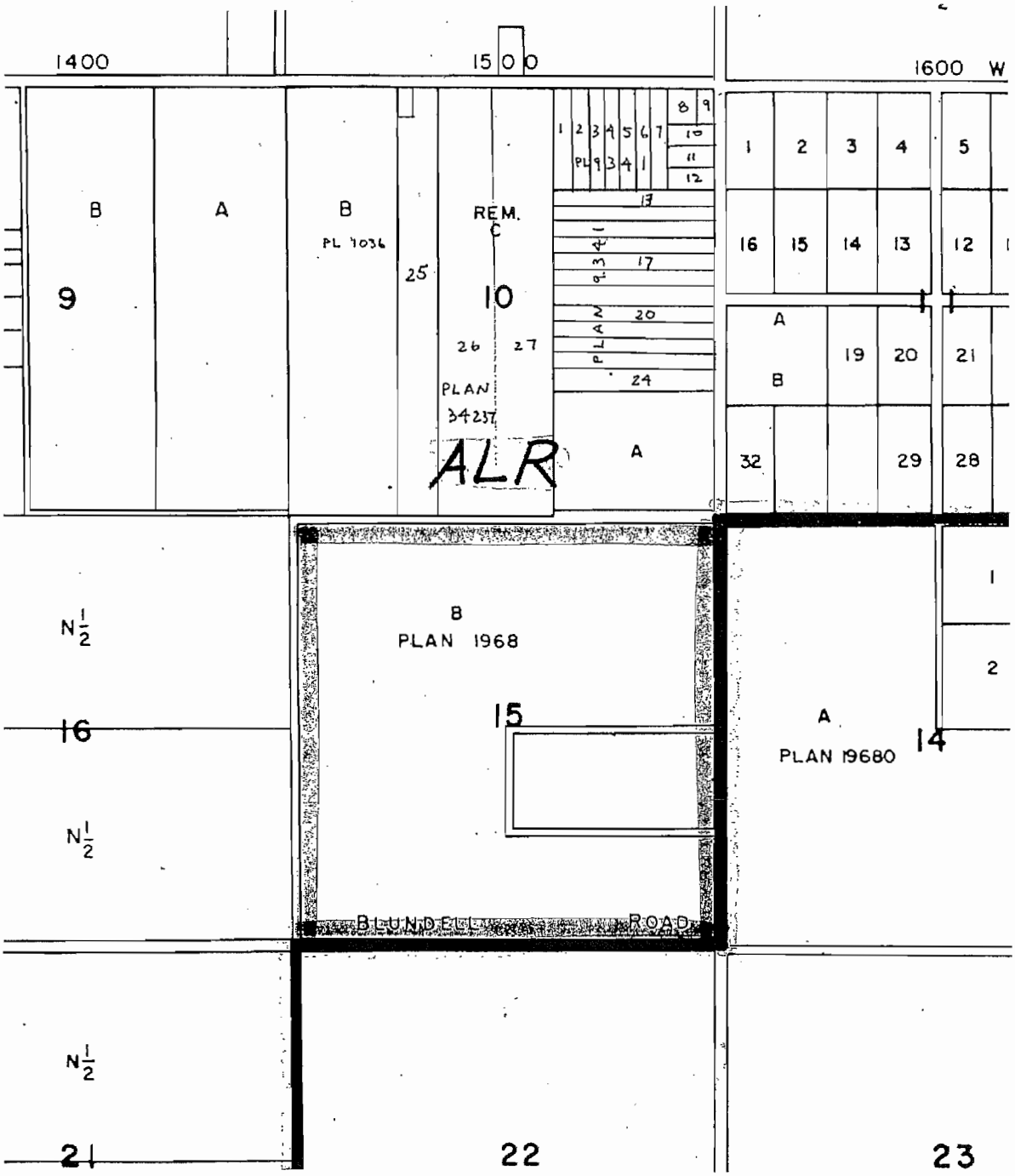
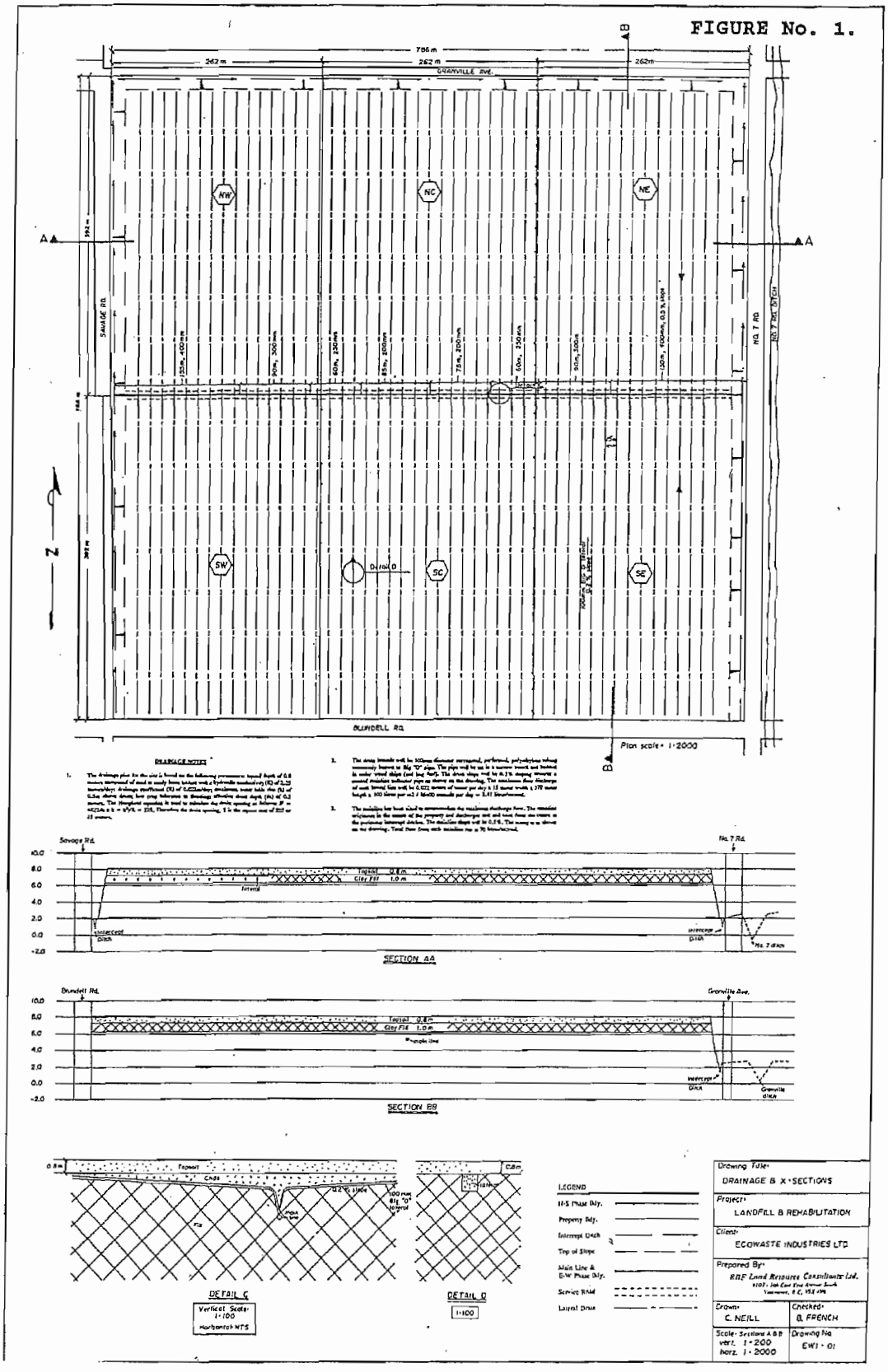


FIGURE No. 1.


786 m
262 m
262 m
262 m
GRANVILLE AVE.
SAVAGE RD.
No. 7 RD.
No. 7 Rd. DITCH
BUNDELL RD.
NW
NC
NE
SW
SC
SE
A
A
B
B
N
Plan scale = 1:2000
DRAINAGE NOTES
SECTION AA
SECTION BB
Savage Rd.
No. 7 Rd.
Bundell Rd.
Granville Ave.
Topsoil 0.6 m
Clay Fill 1.0 m
Interceptor Ditch
No. 7 ditch
Granville ditch
DETAIL C
Vertical Scale 1:100
Horizontal NTS
DETAIL D
1:100
LEGEND
H-S Phase Bdy.
Property Bdy.
Intercept Ditch
Top of Slope
Main Line & E-W Phase Bdy.
Service Road
Lateral Drain
Drawing Title: DRAINAGE & X-SECTIONS
Project: LANDFILL B REHABILITATION
Client: ECOWASTE INDUSTRIES LTD.
Prepared By: RMF Land Resource Consultants Ltd.
Drawn: C. NEILL
Checked: B. FRENCH
Scale: Sections A & B vert. 1:200 horz. 1:2000
Drawing No. EWI - 01

SCHEDULE No. 1.

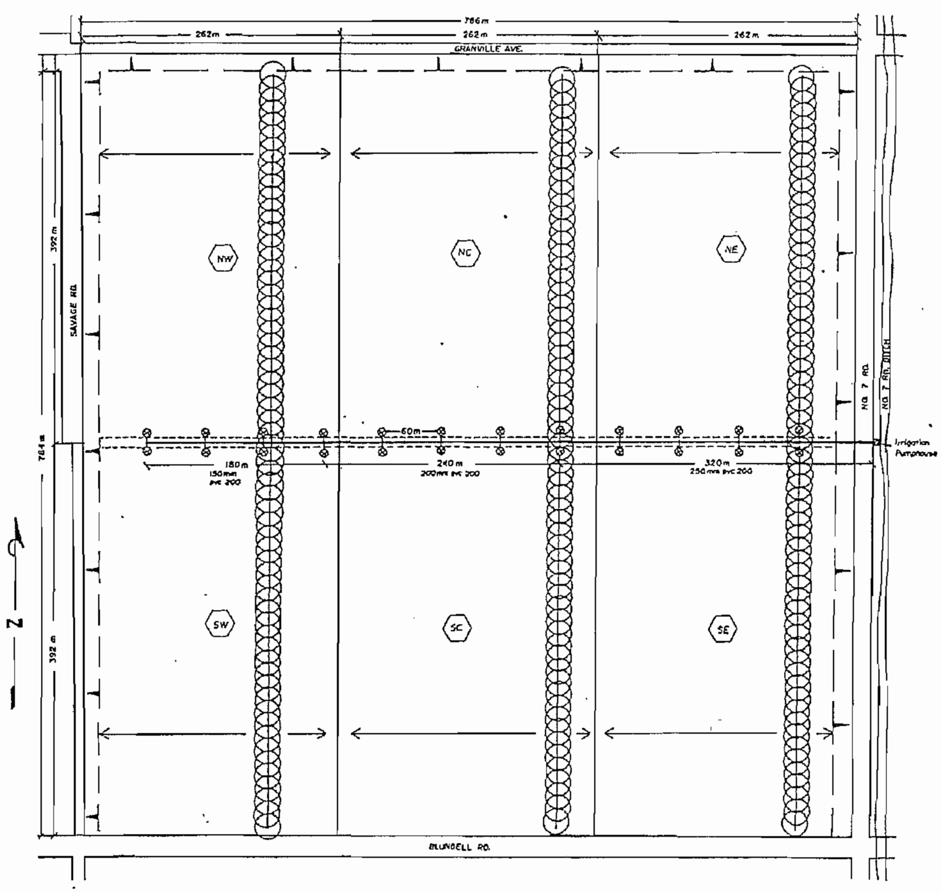
DRAINAGE NOTES

1. The drainage plan for the site is based on the following parameters: topsoil depth of 0.8 meters composed of sand to sandy loam texture with a hydraulic conductivity (K) of 2.25 meters/day; drainage coefficient (R) of 0.022m/day; maximum water table rise (h) of 0.5m above drain; low crop tolerance to flooding; effective drain depth (de) of 0.3 meters. The Hooghout equation is used to calculate the drain spacing as follows: $S^2 = 4K(2de \times h + h^2)/R = 225$. Therefore the drain spacing, S is the square root of 225 or 15 meters.

2. The drain laterals will be 100mm diameter corrugated, perforated, polyethylene tubing commonly known as Big "O" pipe. The pipe will be set in a narrow trench and bedded in cedar wood chips (not hog fuel). The drain slope will be 0.2% sloping towards a central mainline collector pipe as shown on the drawing. The maximum flow discharge of each lateral line will be 0.022 meters of water per day x 15 meter width x 370 meter length x 100 litres per m3 / 86400 seconds per day = 1.41 litres/second.

3. The mainline has been sized to accommodate the maximum discharge flow. The mainline originates in the centre of the property and discharges east and west from the centre to the perimeter intercept ditches. The mainline slope will be 0.5%. The sizing is as shown on the drawing. Total flow from each mainline run is 70 litres/second.

FIGURE No. 2.



IRRIGATION NOTES

1. Water supply will be from the No. 7 Road ditch on the east side of the property. Three phase power will be provided and a pumphouse constructed at the site as shown on the drawing. A 60 H.P. electric motor will be required to provide the 900 USGPM at 175 feet of total head.

2. The proposed irrigation system for the site employs six wheel move units, one for each phase of the project. A service road is proposed to run down the centre of the property from west to east. A buried irrigation mainline with hydrants spaced at 60 meter (200 ft) intervals on both sides of the service road will be installed as shown on the drawing.

3. The irrigation system is designed to meet the peak evapotranspiration (E.T.) demand for the site. The calculation is based on a topsoil layer of sand to sandy loam texture, 0.8 meters depth over an impermeable clay sealing layer. The estimated available water storage capacity (AWSC) for sand is 0.08 meters of water per meter of soil or a total of 0.064 meters for the 0.8 meter soil depth. The peak E.T. is 6mm/day. Converting to Imperial measure for the irrigation calculations, the AWSC is 2.5", peak E.T. is 0.24in/day, availability coefficient is assumed to be 50% or 1.25" (this is the maximum soil water deficit or MSWD). Therefore the peak irrigation interval would be 1.25"/0.24" = 5.2 days. A 40' by 40' sprinkler spacing was chosen using 5/32" nozzles delivering 0.3in/hr. Therefore the required set time to meet the MSWD of 1.25" is 1.25in÷0.77 efficiency x 0.3 in/hr = 5.4 hours. This allows four sets per day including move time. Each move covers 40 feet or 12.2 meters so to cover the +/-240 meter width of each phase will take 240m/12.2m x 4 sets per day = 5 days.

4. Each wheel line will have 30 sprinklers delivering approximately 5 GPM each for a total of 150 GPM per line. Assuming all lines will be operating simultaneously, the total water demand will be 6 x 150 GPM = 900 GPM. The pump and mainlines have been sized to meet this demand. Portable aluminum mainline pipe with hydrants will be used to service the wheel lines between the main hydrants.

5. The total water usage for the year is estimated to be 25 inches or 0.64 meters. This amounts to some 360,000 cubic meters of water per year for the whole area to be irrigated.

LEGEND

Property Line & N-S Phasing

Main Line & E-W Phasing

Hydrants

Service Road

Wetted Diameter

Top of Slope

Drawing Title: IRRIGATION	
Project: LANDFILL & REHABILITATION	
Client: ECOWASTE INDUSTRIES LTD	
Prepared By: RRF Land Resource Consultants Ltd.	
Drawn: C. NEILL	Checked: B. FRENCH
Scale: 1:2000	Drawing No. EWI - 02

IRRIGATION NOTES

1. Water supply will be from the No. 7 Road ditch on the east side of the property. Three phase power will be provided and a pumphouse constructed at the site as shown on the drawing. A 60 H.P. electric motor will be required to provide the 900 USGPM at 175 feet of total head.

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4. Each wheel line will have 30 sprinklers delivering approximately 5 GPM each for a total of 150 GPM per line. Assuming all lines will be operating simultaneously, the total water demand will be 6 x 150 GPM = 900 GPM. The pump and mainlines have been sized to meet this demand. Portable aluminum mainline pipe with hydrants will be used to service the wheel lines between the main hydrants.

5. The total water usage for the year is estimated to be 25 inches or 0.64 meters. This amounts to some 360,000 cubic meters of water per year for the whole area to be irrigated.

Resolution #173/93
Application #30-O-RICH-27166

MINUTES OF THE PROVINCIAL AGRICULTURAL LAND COMMISSION

Meeting held at the B.C. Agricultural Land Commission Office, 4940 Canada Way, Burnaby, British Columbia on the 4th day of February 1993.

Present: K. B. Miller — Chairperson
P. Gambell — Commissioner
J. Glover — Commissioner

An application from Ecowaste Industries Ltd. under Section 2 of the Soil Conservation Act was considered for the property described as:

Firstly: Lot "B", Section 15, Block 4 North, Range 5 West, New Westminster District, Plan 19680, and;

Secondly: Lot "A" (RD 93193-E), Section 15, Block 4 North, Range 5 West, New Westminster District, Plan 2799.

(more particularly shown on plans submitted to the Commission) requesting permission to conduct a comprehensive reclamation of the 60.8 ha total area of the two (2) subject properties. The proposal involves the extraction of the remaining peat material and to then fill the site with inert industrial wastes such as construction demolition, natural land clearing materials, concrete, brick, wood, plastic and other similar materials.

The fill would then be capped to an acceptable agricultural standard with a final agricultural capability, with irrigation, of Class 2A. The Commission was then presented with a report from Khevin Development Services which explained the proposal in detail.

IT WAS
MOVED BY: Commissioner J. Glover
SECONDED BY: P. Commissioner Gambell

That the application be allowed subject to compliance with all other legislation and to the following conditions:

1.0. **LOCATION**

All filling and associated activities are to be restricted to the two (2) subject properties.

...2

2.0. TERM

This approval shall be valid for five (5) years from the date of issuance of the permit by the City of Richmond.

3.0. BONDING

A performance bond in the form of a Letter of Credit or Certified Cheque or Canada Savings Bonds in the amount of $125,000.00 is to be posted with the Commission.

4.0. GENERAL OPERATING CONDITIONS

1) All aspects of the peat removal, filling and reclamation are to be overseen by a Land Reclamation Specialist. The Reclamation Specialist should be a member in good standing with the B. C. Institute of Agrologists and must have specialized in Soil Science, or a similar earth science, with academic credits in the areas of geomorphology, soil genesis, soil classification, soil physics, drainage and irrigation. The Reclamation Specialist shall act as liaison with the Commission Staff Agrologist on technical matters, clarification of the conditions of this approval and be responsible for maintaining up to date reports on all aspects of the operation.

2) Prior to the commencement of any works, the Commission must be notified of the name of the Land Reclamation Specialist. Confirmation from the Land Reclamation Specialist must also be provided to the Commission.

3) There is to be no movement or manipulation of soil, which is to be used for reclamation, during conditions of adverse soil moisture content. The movement or manipulation of the soil is to be conducted only when the soil is below field capacity.

4) Surface drainage from the working, filling and rehabilitated areas shall be controlled at all times to prevent erosion, flooding, siltation or other degradation of the subject property, adjacent lands, ditches or waterways.

5) All run-off shall be diverted into catchment ponds or silt traps prior to discharge from the property into adjacent ditch systems.

6) Weed control is to be practiced at all times. Weeds must be controlled before seed set and Canada Thistle before flowering. Mechanical and/or approved chemical control is acceptable.

7) Under no circumstances is any cedar hog fuel or any other form of cedar woodwaste to be brought onto the property.

...3

8) The fill permit is to be posted at a prominent location and be clearly visible.

9) The property is to be secured in such a manner as to prevent unauthorized deposition of fill. Also, an unobstructed sign is to be posted on the property at a prominent location prohibiting unauthorized deposition of material.

5.0. SITE PREPARATION AND FILLING

1) Filling is not to occur within .75 meters of any legal property boundary.

2) The fill material shall consist of inert industrial wastes such as construction demolition and natural land clearing materials which have been crushed or partially processed, concrete, brick, wood, plastic and similar material. No domestic wastes, putrescibles or other polluting wastes are to be deposited on the property.

3) Each load of fill material is to be inspected on site prior to being deposited on the property.

4) The fill is to be placed in lifts not exceeding 1.0 meter, and compressed.

5) All filling, including the manufactured topsoil required for reclamation, is not to exceed a maximum depth of 6.0 meters above the original ground level, or 8.0 meters above sea level.

6) Prior to any filling, all remaining peat within each phase is to be removed.

7) Any peat remaining on the property is to be stockpiled in storage berms.

8) The sideslope of each storage berm is not to exceed a uniform and stable slope of 2:1.

9) As a method of erosion and weed control, each storage berm shall be seeded with an appropriate cereal or forage mix and fertilized.

10) The soil surface of a storage berm shall not remain bare for more than 30 days without providing either a vegetative or mulch cover of straw or shavings.

...4

11) The excavated peat may be used as part of the composting operation and sold provided 20% of the excavated peat remains on the property for reclamation. This peat material is to be composted to the humic state (no sign of coarse fiber remaining) and incorporated into the final upper 30 cm of topsoil mixture.

12) The entire property is to be perimeter diked to the height of the final elevation of the fill.

13) The top of the dike is to be a minimum of 2.5 meters in width but not to exceed a maximum width of 5 meters. The dike may be used as a perimeter road.

14) Outer sidewall slopes of the dike shall not exceed a maximum slope of 2:1, while inner sideslopes of the dike are not to exceed a maximum slope of 1:1.

15) Peat extraction, filling and reclamation is to be carried out on a progressive basis in six (6) equally sized phases.

16) The project shall begin with phase 1, located in the northeast corner of the property and proceed in an orderly manner to the next phase.

17) Each new phase must be located adjacent the previous phase. The project shall proceed to completion in this manner.

18) Excavation and filling of a new phase shall not proceed beyond 20% of completion until:

    i) The previous phase is completely reclaimed to either the specified agricultural use, or a forage cover has been established.

    ii) The location of the next adjacent phase is identified.

    iii) The final agricultural use of the next phase has been determined.

6.0. REHABILITATION OF THE FILLED AREA

1) Upon completion of filling each phase with the approved materials, the fill is to be capped with a minimum of 1.0 meter of medium textured glacial till material.

2) The glacial till capping shall be placed over the fill in 0.5 meter lifts and compacted.

...5

3) Upon completion of spreading and compacting the capping, a minimum of 0.8 meters of medium textured sands are to be placed over the capping.

4) As a method of increasing the available water storage capacity (A.W.S.C.) of the sand, the final upper 30 cm is to have a texture of loamysand. This will involve the incorporation of between 15% to 30% of silt into the sand. No soil with a texture of silty clay loam or finer is to be used as a soil amendum to increase the A.W.S.C. of the sand.

5) The Commission encourages the backhauling of good quality agricultural soil for rehabilitation purposes provided;

   i) the soil material is of mineral origin only,

   ii) the soil material is not to contain any coarse fragments, including particle sizes greater than coarse sand to 2.5 cm dia.

   iii) the texture of the soil is no coarser than loamysand or finer than siltloam.

6) A suitable organic matter shall be applied to the upper 30 cm of reclaimed soil at a rate of 10 tonnes/hectare dry weight. This organic matter may be added in the form of animal manures or a cereal or forage cover crop turned into the soil. Incorporation of the compost material produced on the property may be used as the organic supplement, provided the composted organic material has decomposed to the humic state and no sign of fiber remains. Sawdust and other woodwaste materials are not considered suitable organic matter supplements.

7) If no immediate agricultural use is to be made of each phase, upon completion of all aspects of rehabilitation, a seedbed is to be prepared and the rehabilitated areas are to be seeded to an appropriate cereal or forage mix and fertilized. The application rate and type of cereal or forage seed mix and fertilizer mix is to be determined by the Reclamation Specialist.

8) The improved agricultural capability rating, with irrigation, of the rehabilitated soil is to be Class 2A when all works have been completed.

...6

7.0 DRAINAGE CONTROL AND DRAINAGE SYSTEM INSTALLATION

1) Upon completion of all aspects of reclamation of each phase and prior to establishing any multi-year crop other than forage and prior to 20% completion of the next phase, a subsurface drainage system is to be installed.

2) The drainage system shall be installed in accordance with the plans and drainage notes submitted with the application.

3) All aspects of installation of the subsurface drainage system are to be overseen and supervised by either a Drainage Specialist or the Land Reclamation Specialist.

4) Installation shall be by way of a trenchless plow or chain type trencher equipped with automatic depth and grade control using laser alignment technology.

5) The central collector shall be installed in phases, east to west down the centre of the the property and installed with depths and grades allowing it to be extended through each successive phase.

6) Laterals shall be installed with 100 mm diameter perforated corrugated polyethylene pipe (Big "O") at maximum 15 meter interval spacings, with the minimum invert elevation at 1.0 meter below the soil surface.

7) Lateral pipes shall be connected to the buried east-west mainline collector and backfilled with gravel.

8) The outlet of the collector shall be located to ensure the water outfall is carried away into either the No. 7 Road ditch to the east and/or the Savage Road ditch to the west.

9) Appropriate erosion control and siltation control measures shall be undertaken at all collector outlets prior to discharge into the local ditching system.

8.0. IRRIGATION INSTALLATION

1) Upon completion of all aspects of extraction, filling and reclamation of each phase, an irrigation system shall be installed in accordance with the plan and irrigation notes submitted with the application.

...7

2) All aspects of installation of the irrigation system shall be overseen by either the Reclamation Specialist or an Irrigation Specialist.

3) The irrigation system shall consist of a mainline running east to west through the centre of the property and installed in conjunction with a service road.

4) The mainline shall be installed in a manner allowing it to be lengthened through each successive rehabilitated phase.

5) Hydrants shall be located every 60 meters, located in pairs on either side of a service road to allow for six (6) wheel move units, one for each phase.

6) Each wheel move unit is to be designed to have sprinkler head overlap of 50%.

7) An irrigation pumphouse is to be located on the eastern side of the property to use the No. 7. Road ditch as an irrigation source and is to have sufficient capacity to operate all six (6) wheel move units.

9.0. REPORTING AND MONITORING

1) The project will be subject to on-going and regular monitoring by the Commission and the City of Richmond.

2) The Reclamation Specialist shall monitor the operation on a regular basis and shall submit semiannual reports (every six (6) months from the date of issuance of the Soil Placement Permit by the City of Richmond) to the Commission Staff Agrologist, identifying dates of field inspections and describing the progress of the extraction operation. These reports are required to ensure compliance with all the conditions of the Commission's approval.

3) Any changes to the operation not addressed in the approval are to be made through the Commission Staff Agrologist, by the Reclamation Specialist, provided the changes do not alter the intent of the Commission approval.

Furthermore, if the applicant has not completed the project within the specified time period, then an appropriate extension of time may be granted. More specifically, an extension may be granted for this application if there are no changes to the original approval and the operation is in compliance with the local bylaws and Agricultural Land Commission conditions.

Carried.

Timeline – Ecowaste Landfill Activities in the ALR

- 1993 – Approval to allow the applicant to operate a landfill in the ALR under the Soil Conservation Act (Permit S-271)
- 1999 – Approval for a 10 year renewal to Permit S-271 to allow the continued operation of the landfill in the ALR.
- 2002 – Repeal of the Soil Conservation Act resulting in soil removal and filling in the ALR being regulated and permitted through the ALC Act and related regulations. As a result of the repeal of the Soil Conservation Act in 2002, no further renewals or extensions can be granted under Permit S-271. ALC staff have confirmed that the only means to provide an extension is through the ALR non-farm use application process as the ALC Act and regulations is the appropriate legislation to address the proponents request to extend the landfill operations.
- December 19, 2011, Council granted authorization to open a number of un-built road allowances to allow construction of future public roads to facilitate Ecowaste's development of their industrial land. This application was also reviewed and approved by the ALC. Blundell Road (between No. 7 Road and Savage Road), Savage Road (between Williams Road and Francis Road) and portions of the Francis Road allowance were approved for the development of public roads in coordination with Ecowaste's proposed redevelopment plans for their industrial zoned and designated land.
- A Development Permit application (DP 11-566011) for the industrial land south of the Blundell Road allowance is to secure an ALR landscape buffer and address impacts to an Environmentally Sensitive Area (ESA). This application is currently being processed by staff.
- 2009 to Current – Exploration and development planning by Ecowaste for a large scale phased industrial development proposed for the portions of the landfill site south of the Blundell Road allowance (outside of the ALR; zoned and designated in the OCP for Industry), which resulted in the following:
    - Ecowaste obtained appropriate amendments to their operational certificate approved by the Ministry of Environment to facilitate a re-opening and vertical expansion to the landfill outside of the ALR and modify the closure plan to accommodate a suitable grade and structural base to support the proposed industrial development.
    - Focus on landfill and site modifications on Ecowaste industrial lands for the immediate future (approximately 8-10 years). When filling and closure of the landfill site for the future industrial site is completed, fill activities will resume on the ALR portion of the landfill site north of the Blundell Road allowance. Currently, active filling on the ALR portion of the landfill site is not being undertaken as Ecowaste has implemented an interim closure while activities shift to the industrial zoned portion of the landfill to the south.
    - The above two factors are the main reasons for the proponent's ALR non-farm use applications to extend the time period for the landfill operation for 20 years and locate the soil processing activities onto the ALR portion of the landfill.

BRITISH COLUMBIA

November 4, 2013 File: MR-04922

REGISTERED MAIL

Ecowaste Industries ltd
200 – 10991 Shellbridge Way
Richmond, BC V6X 3C6

Attention: Tom Land - General Manager

Dear Tom Land,

Re: Ecowaste Design, Operations and Closure Plan – Final Report (October 2013)

Ecowaste Industries Ltd submitted to the Ministry of Environment (MOE), the document titled "Ecowaste Landfill MR-04922 Design, Operations and Closure Plan (DOCP)" for final review and approval on October 15, 2013. The DOCP improves upon previously submitted plans and reflects requirements set forth in Operational Certificate MR-04922, last amended on October 27, 2005.

Ministry staff have completed a review of the above referenced document and are satisfied that the DOCP meets the requirements set forth in Section 2.15 and 2.17 of the Operational Certificate MR-04922 and the Ministry's *Landfill Criteria for Municipal Solid Waste* (Interim Second Edition – August 2013). It is noted that the DOCP was certified by the Qualified Professional, Greg Huculak, P.Eng. of GNH Engineering Ltd., in accordance with generally accepted engineering practices. It is on this basis that the Ecowaste Landfill MR-04922 Design, Operations and Closure Plan (October 2013) is hereby approved. The DOCP approval supersedes all previous Design& Operations Plans and/or Closure Plans for the Ecowaste Landfill. Should there be any inconsistency between the DOCP and the Operational Certificate MR-04922; Operational Certificate MR-04922 must take precedence unless otherwise agreed in writing by the Director.

Please be advised that additional conditions may apply, including requirements under the *Agricultural Land Commission Act*, Contaminated Sites Regulation, and the City of Richmond's municipal bylaw(s), that require written authorization prior to the commencement of works onsite.

This letter does not authorize entry upon, crossing over, or use for any purpose of private or crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with you.

./2

Ministry of Environment
South Coast Region

Mailing Address:
Suite200, 10470-152 Street
Surrey BC V3R 0Y3

Telephone: (604) 582-5200
Facsimile: (604) 930-7119
http://www.gov.bc.ca/
http://www.gov.bc.ca/env

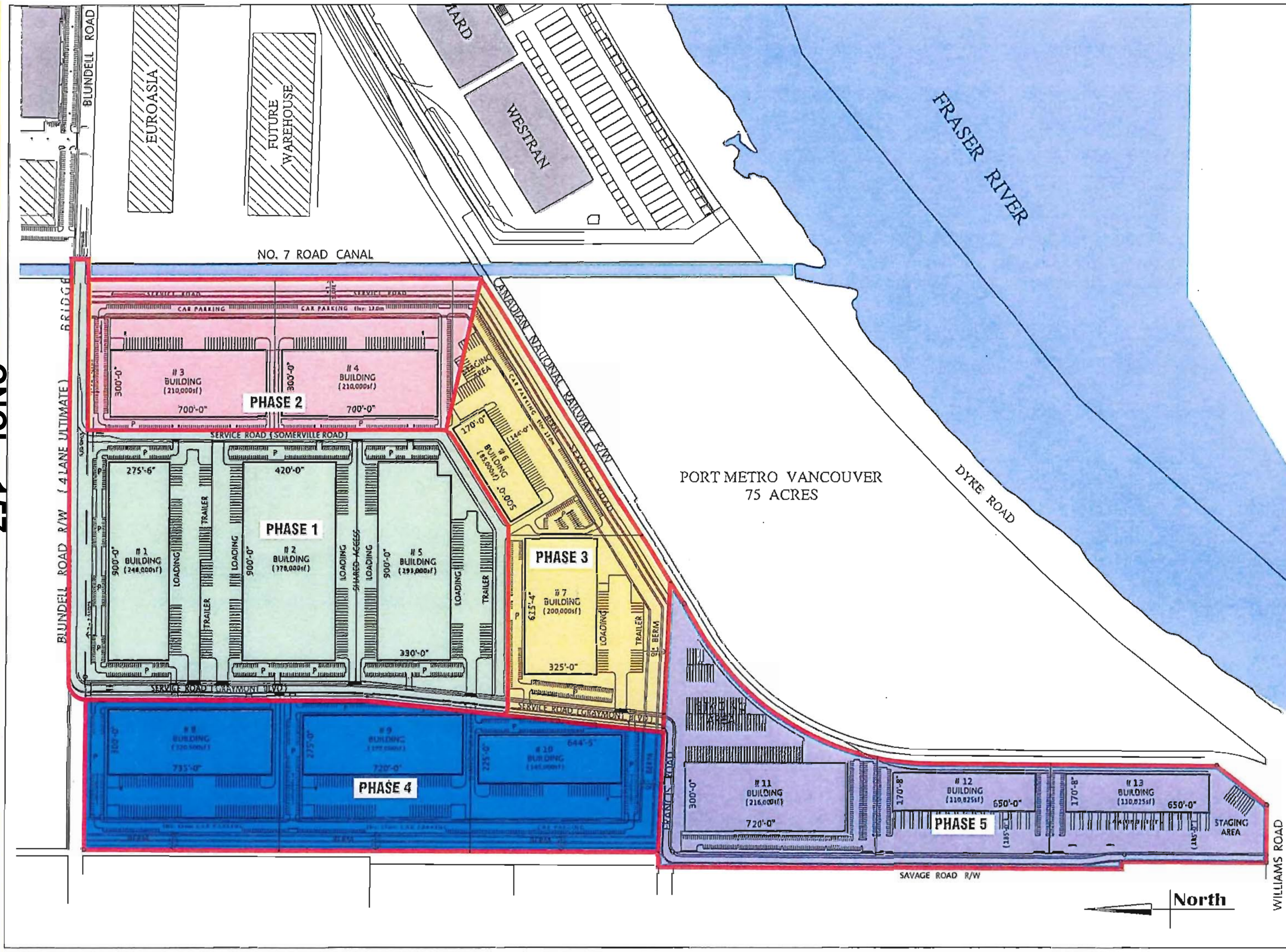
This letter shall not be construed as a waiver of any lawful requirement pertaining to any unauthorized discharge of waste to the environment, and is without prejudice to any further legal action that the Ministry may take under the *Environmental Management Act*.

If you have any questions, please contact Ashley Smith at (604) 582-5358.

Sincerely,

Avtar S. Sundher
For Director, *Environmental Management Act*
Environmental Protection Division

cc: Lesley Douglas, Manager, Environmental Sustainability, City of Richmond
Jonn Braman, Regional Director, South Coast Region, MOE



KEY PLAN

PERTINENT DATA:

CIVIC ADDRESS:
Corner of BLUNDEL & No. 7 ROAD
RICHMOND, B.C.

LEGAL DESCRIPTION:
PORTION OF SECTIONS 22 AND 27, BLOCK 4
NORTH RANGE 5 WEST, N.W.D.

ZONING: INDUSTRIAL (Zoning By Law 8500)

SITE AREA:
AREA Approx. = 686,422 sm (169.62 ac) 68.66 ha

POTENTIAL LOT SIZES

PHASE	BUILDING	AREA sm	AREA ac	AREA ha
1	BUILDING # 1	53,246	13.16	5.32
	BUILDING # 2	67,486	16.76	6.70
	BUILDING # 5	59,653	14.74	5.96
2	BUILDING # 3	53,330	13.17	5.33
	BUILDING # 4	53,719	13.27	5.37
3	BUILDING # 6	43,226	10.68	4.32
	BUILDING # 7	50,219	12.41	5.02
4	BUILDING # 8	[illegible]	[illegible]	[illegible]
	BUILDING # 9	[illegible]	[illegible]	[illegible]
	BUILDING # 10	[illegible]	[illegible]	[illegible]
5	BUILDING # 11	55,400	13.69	5.54
	BUILDING # 12	29,483	7.28	2.95
	BUILDING # 13	34,075	8.42	3.41
	GROSS LOT AREA	652,658	161.22	65.25

SITE COVERAGE: 60.0% max. for Bldgs
TOTAL BUILDING AREA = 2,625,310 sf (243,881.3sm)
243,881 / 686,442 = 36%

HEIGHTS: 12.0m max.
ACCESSORY STRUCTURES = 20.0m max.

SETBACKS:
FRONT AND EXTERIOR SIDE YARD = 3.0m
INTERIOR SIDE AND REAR YARD = 0.0m

PARKING INFORMATION:
REQUIRED: 1/100sm of GROSS LEASABLE AREA

PARKING STALL & AISLE DIMENSIONS:
STANDARD STALL = 2.65m x 5.50m (8'-9" x 18'-0")
AISLE = 7.50m (24'-8") min
SMALL STALL = 2.40m x 5.00m (7'-10" x 16'-5")
H/C CAR STALLS = 3.70m x 5.50m (12'-2" x 18'-0")

OMICRON
TOTAL BUILDING SOLUTIONS

PROPOSED:

ECORIDGE INDUSTRIAL PARK

BLUNDELL ROAD & No. 7 ROAD, RICHMOND, B.C.

Drawing Title: PROPOSED PHASING
Drawing Scale: 1 = 400
SCALE BAR 0 – 250m
Project Number: 10-10-126
Date: OCT. 9, 2012
Drawing Number: SK-10

Soil Survey and Rehabilitation Assessment

Ecowaste Landfill
7011 No. 7 Road
Richmond, BC

Prepared for:
Ecowaste Industries Ltd.
200 – 10991 Shellbridge Way
Richmond, BC
V6X 3C6

Prepared by:
Pottinger Gaherty Environmental Consultants Ltd.
#1200 – 1185 West Georgia Street
Vancouver, BC
V6E 4E6

PGL File: 079-04.01

September 2013

PGL

Table of Contents

FIGURES

APPENDICES

1.0 INTRODUCTION

Pottinger Gaherty Environmental Consultants Ltd. (PGL) was retained by Ecowaste Industries Ltd. (Ecowaste) to confirm compliance with the conditions of the Agricultural Land Commission's (ALC) 1993 approval for 7011 No. 7 Road, Richmond, BC (the Site, Figure 1). PGL's assessment will form part of the Owners' applications to the ALC for non-farm use application of 60.7ha of land within the Agricultural Land Reserve (ALR).

Ecowaste's non-farm use application is required to update the previous application under the Soil Conservation Act and because Ecowaste has subcontracted four operators to support and enhance their landfill operation: Tervita Corporation, Quantum Murray, Urban Wood Waste Recyclers and Yardworks/Arrow. These operations are integral to the operation of Ecowaste's landfill to ensure that contaminated soils deposited on the site are reduced to a minimum (Tervita and Quantum) and to enhance the efficiency of their recycling efforts (Yardworks/Arrow and Urban Wood Waste Recyclers).

Our report includes a summary of the conditions of the 1993 ALC approval, description of the Site, an outline of our assessment methodology, a description of the historical and current Site soils, and an assessment of the Site's agricultural capability.

2.0 SITE DESCRIPTION

The Site is located in the City of Richmond (Figure 1) and is part of the Ecowaste landfill operated by Ecowaste Industries Ltd. (Ecowaste) at 15111 Williams Road in Richmond, BC. The Ecowaste landfill is comprised of 118ha located between No. 6 and No. 7 Roads and between Granville Avenue and Williams Road. Of the 118ha, a 61ha parcel consisting of two lots are located within the ALR (ALR Site). The remainder is located on a 57ha non-ALR parcel (Industrial Site). In 1993, Ecowaste received approval under the Soil Conservation Act from the ALC to remove any remaining peat from the ALR Site and then utilize properties as part of its landfill operation.

The Ecowaste landfill, including the non-ALR portion, accepts the disposal of inert waste primarily from construction and demolition activities. The landfill also accommodates several related industries as tenants, including yard waste composting facilities, wood processing facilities, and a soil remediation facility. Only yard waste composting activities occur on the ALR Site.

The Site is currently used for disposal of solid waste, including: demolition waste, excavation waste and land-clearing debris. Putrescible wastes, liquids, semi-solids, biomedical waste and hazardous waste (excluding asbestos managed as per the Hazardous Waste Regulation) are not permitted. Typical excavation, construction and demolition materials include:

- Wood;
- Roofing;
- Plastics;
- Concrete;
- Asphalt paving;
- Insulation (excluding asbestos), and
- Land-clearing debris.

Following placement of the solid waste, the completed landfill will be improved by placement of a soil cover suitable for agriculture. Soils placed on the ALR-zoned portions of the property are required to meet the BC Contaminated Sites Regulation's Agricultural Land Use Standards.

The surrounding area is characterized by:

- North: ALR agricultural land use;
- West: ALR agricultural with a mix of non-farm uses including a golf course/driving range and as well as farm uses;
- South: non-ALR Ecowaste landfill, which will be developed as a logistics-based industrial park once filling is complete; and
- East: non-ALR Industrial land use operated by Port Metro Vancouver and developed for port-related industrial purposes.

Table A: ALR Site Identification Information

Civic Address	7011 No. 7 Road, Richmond, B.C.
Land Use	Agriculture (AG1)
Legal Description	Lot B, Section 15, Block 4 North, Range 5 West, New Westminster District, Plan 19680 (53.7ha) Lots 1, 2, 3, 4 Section 15, Block 4 North, Range 5 West, New Westminister District, Plan 2799 (7ha)
Latitude*	49° 09' 31.5" North
Longitude*	123° 03' 07.5" West
Site Area	60.7ha

3.0 METHODOLOGY

PGL's soil survey involved reviewing existing historical reports, maps, and aerial photographs of the Site, reviewing pertinent documents at the ALC, developing a detailed soil sampling plan, and conducting a Site visit to describe soil pits.

The soil sampling plan consisted of excavating 12 test pits across the Site to confirm soil conditions (Figure 2). The 12 test pits were excavated to depths ranging between 1.0m and 1.2m.

4.0 SOILS AND AGRICULTURAL CAPABILITY

Typically, soils in the area are relatively young, having developed from organic deposits associated with wetlands adjacent to the Fraser River. Native soils on the site consisted of a mix of Lulu and Triggs soils. This section describes the soils at the Site and assesses their agricultural capability.

4.1 Soil Description

The soils on the subject property and the surrounding area consist of two main soil series. These soils were classified and mapped by Jungen (1985) prior to completion of peat harvesting activities. Site soils were part of the Lulu and Triggs series, however, following peat extraction and filling, soils would be classified as anthropogenic.

5.0 AGRICULTURAL CAPABILITY CLASSIFICATION

The land capability classification for agriculture (agricultural capability) identifies the potential for agriculture. The agricultural capability usually gives two ratings: unimproved and improved. Unimproved ratings describe the land in its native condition without any improvements to the soil. Improved ratings indicate the land's potential once appropriate management practices have been conducted. An explanation for agricultural capability classes is attached in Appendix 1.

5.1 Historical Soil Survey

The historical mapping for the ALR Site, however, is not applicable due to the past peat extraction and resulting soil disturbance. Historical surveys prior to peat extraction indicate the main agricultural limitation of the soils in the area was excess soil moisture, poorly decomposed peat, and low fertility. PGL used this as a guide to produce a more detailed survey. The Site is bisected by two very large polygons within a lowland adjacent to the Fraser River.:

An improved agricultural capability classification of 60% 3WN and 40% 2WD and an unimproved rating of 100% 4W (Agricultural Capability Map 92G.3h) was mapped throughout the western portion of the property. The eastern portion of the property was mapped as having an improved agricultural capability classification of 100% Ø3LW and an unimproved rating of 100% Ø5WP (Agricultural Capability Map 92G.3h).

C & F Land Resource Consultants Ltd. (C & F) previously prepared a land rehabilitation plan in 2008 for a 32ha property at 8060 No. 6 Road, Richmond BC, which is located within the ALR and Ecowaste's holdings. C & F found that the entire property had been disturbed from native conditions by peat extraction and were classified as one of four units which are summarized below.

Table B: Existing Agricultural Capability (from C & F)

Unit #	Unimproved Agricultural Capability	Improved Agricultural Capability	Area (ha)	% of Total
1	O7W	O5WF	17.7	55.3
2	$O5WF^{8}$ - $5WD^{2}$	$O4WF^{8}$ - $4W^{2}$	8.7	27.2
3	O7F	O7F	3.6	11.3
4	O5WF	O4WF	2.0	6.2
		Total	**32.0**	**100**

Following rehabilitation, C & F predicted that areas which underwent rehabilitation would have an agricultural capability of Class 3A improvable to Class 1, while perimeter side slopes would have an agricultural capability of 7T and drainage ditches would be $O5WF^7$ - $7TI^3$.

Ecowaste's 1992 Soil Conservation Act Application to the ALC indicated that the impacted soils would have an improved agricultural capability rating of 100% Ø4LW assuming significant improvements to drainage, fertility and levelling. Unimproved ratings were found to be Ø7W for flooded and inundated portions of the Site, 7E for roads and filled areas and Ø5WF for the remainder of the Site.

5.2 Baseline Soil Conditions

The entire property has been disturbed from original conditions due to peat extraction and subsequent waste-filling activities. PGL conducted a detailed soil survey of the Site to assess current soils to establish baseline conditions.

Soils vary across the Site depending on the state of filling and typically fall into three categories: road network, areas undergoing filling and filled/rehabilitated areas (Appendix 2 – Site Photographs). Our report is intended to establish baseline conditions for the portion of the Site still undergoing filling activities as proposed in the non-farm use application.

This area is proposed for four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The operators include Tervita Corporation, Quantum Murray, Urban Wood Waste Recyclers and Yardworks/Arrow. Yardworks/Arrow is already located on the Site while the remaining three operations are currently located on Ecowaste's industrial property.

5.2.1 Current Mapping

Site soils have been significantly altered by peat extraction and subsequent filling activities. This has resulted in three soil environments and associated soils: areas undergoing filling, filled/rehabilitated areas and road networks. Soil characteristics are summarized below.

Areas Undergoing Filling

Areas undergoing filling are located in central portion of the Site. Filling extends from the northern portion of the Site south towards Blundell Road. Within the central portion of the Site, no mineral soil was observed within the top 1m as waste placement activities were being finalized. Fill consisted of road demolition waste, excavation waste and land-clearing debris. Waste disposal includes placement and compaction of waste to a suitable density to an established elevation prior to placement of a soil cap to meet agricultural capability objectives.

Within the northern portion of the property, cover fill is currently being placed over waste fill. Cover fill originates from treated soil which meets the BC Contaminated Sites Regulation's Agricultural Land Use Standards.

Soil utilized for cover fill originates from a variety of offsite locations and its composition is heterogeneous across the Site. Soil composition is dependent upon what type of soil is received at a given time. Generally, cover fill soils are medium-textured glacial till which extend to over 1m before grading into the underlying waste. Placement of cover fill in this area is not yet complete and a seedbank has not yet been prepared.

Filled/Rehabilitated Areas

Approximately 70% of the ALR land considered under the non-farm use application has been filled and 25% has been rehabilitated. These areas primarily include the perimeter of the Site. Filled and rehabilitated areas were investigated where access was permissible. Following closure of filled cells, irrigation lines were installed to improve the rehabilitated lands agricultural capability. PGL's investigation was focused on areas where the irrigation network would not be encountered.

Prior to filling, all remaining peat was removed, after which inert industrial wastes were placed in lifts not exceeding 1m and were compressed as stipulated in the ALC's resolution. Once the established final elevation for the fill was reached, waste material was capped with a minimum of 1m of medium-textured soil.

Soil utilized for cover fill originates from a variety of offsite locations, so its composition varies and is heterogeneous across the Site. Soil was typically characterized as being a medium-textured loam. Based on ALC requirements, soil was placed in 0.5m lifts and compacted.

Filled areas were contoured to promote adequate drainage and minimize the potential for surface ponding. Following rehabilitation, soils were seeded with either an appropriate cereal or forage crop and in the case of the southwestern portion of the property, were planted with a variety of deciduous trees for agroforestry purposes.

Rehabilitated soils are serviced by an in-ground irrigation network to maximize the soils agricultural capability.

Road Networks

An access road loops through the Site from Blundell Road which accesses the filling areas and will be used to serve the proposed sub-contractor operations. The road is comprised of road base and is not paved. The road is bounded by areas undergoing filling activities or filled/rehabilitated areas.

5.2.2 Current Agricultural Capability

Areas Undergoing Filling

Areas undergoing filling have been disturbed, including peat extraction activities and ongoing waste filling. Where filling is actively occurring the agricultural capability is 7F and is un-improvable in its current state. Following placement of a soil cap and suitable growing media, agricultural capability will increase to an unimproved rating of 100% 3A and an improved rating of 100% 2/1.

Filled/Rehabilitated Areas

Peat extraction and subsequent filling and contouring has greatly improved the agricultural capability of the Site soils primarily by removing the less fertile, poorly decomposed, organic soils and reducing the excess water which limited previous agricultural potential. Rehabilitation works have resulted in an improved agricultural capability classification of 90% 2/1 and 10% 6T and an unimproved rating of 90% 3A and 10% 6TA. Lower capability soils are located adjacent to Blundell Road where fill slopes steeply up to the north.

Road Networks

The road network filled area has an agricultural capability of Class 7F and is un-improvable since it will be developed for roads on completion of the rehabilitation.

6.0 1993 ALC APPROVAL CONDITIONS

The 1993 ALC Resolution #173/93 allowed peat extraction and the deposition of fill to be undertaken on the Ecowaste property, subject to the following conditions which are described further below:

- General operating conditions;
- Site preparation and filling;
- Rehabilitation of the filled area;
- Drainage control and drainage system installation;
- Irrigation installation; and
- Reporting and monitoring.

6.1 General Operating Conditions

General operating conditions of the Ecowaste Landfill is detailed in their January 2013 Design, Operations and Closure Plan Submission which is included in Ecowaste's Application for Non-Farm Use and Soil Permit Renewal.

6.2 Site Preparation and Filling Procedures

Currently 70% of the ALR land has been filled. A detailed filling plan is included in the document *Ecowaste Landfill - Design, Operations and Closure Plan January 2013*. Waste is spread out in thin lifts between 0.3-0.6m and compacted with heavy machinery as required under the ALC resolution. Each cell was filled to approximately 3m in height. Following placement of each lift, 0.6m of cover soil was placed to secure the lift. The lift will also be sloped to facilitate appropriate drainage.

The final 0.5m of the subgrade will consist of free draining, permeable soil, sand or gravel, while the overlying topsoil will be clean with a coarse fragment content less than 5% with no texture finer than silty clay loam and no coarser than sandy loam. The topsoil will also be placed evenly over the surface to the finish grade.

Prior to landfilling inert waste consistent with construction, demolition and land-clearing debris, the material was screened to ensure only acceptable materials were being deposited onsite. Fill will be free of contaminants as well as large woody debris, construction rubble, demolition material, metals, plastics and garbage. Minor amounts of plastic pipe, brick, concrete and asphalt are acceptable for base fill as long as it is placed more than 2m from the surface.

Once the final closure elevation has been achieved the Site is covered with 2m of soils which meet the BC Contaminated Sites Regulations Standards for Agricultural Land Use.

6.3 Rehabilitation of the Filled Area Procedures

The original approval for fill/rehabilitation as approved by the ALC by resolution #173/93 required that the final improved agricultural capability rating, with irrigation is to be Class 2A. To meet the improved classification, the resolution also required that rehabilitation of the filled area:

- Upon completion of filling , the fill is to be capped with a minimum of 1.0m of medium-textured glacial till material;
- Upon completion of spreading and compacting the capping, a minimum of 0.8m of medium-textured sands are to be placed over the capping;
- The final upper 0.3m is to be loamy sand;
- Encouraging backhauling of good quality agricultural soil for rehabilitation purposes;
- Application of suitable organic matter to the upper 0.3m of reclaimed soil; and
- Preparation of a seedbed if no immediate agricultural use is planned.

Following rehabilitation, the rehabilitated Site will be maintained in a high state of agricultural management for a period of no less than five years following completion. Already rehabilitated areas have been either seeded with a forage crop or used for agro-forestry.

6.4 Drainage Control and Drainage System Installation

Drainage control and drainage system installation is detailed in Ecowaste's January 2013 Design, Operations and Closure Plan Submission which is included in Ecowaste's Application for Non-Farm Use and Soil Permit Renewal.

Stormwater and runoff from the Site are managed through a stormwater drainage and collection system. The leachate that percolates through the cap is managed in a separate leachate collection system. It then undergoes additional treatment via an aeration pond and passage through a constructed wetland before ultimately being discharged to the No. 7 Canal via the Granville Avenue ditch.

6.5 Irrigation Installation

In 2006, Ecowaste retained SYLVIS to design and construct a soil-plant system for use as an irrigation-based leachate treatment option. In 2007, SYLVIS began fabricating topsoil using combinations of sand, biosolids, recycled paper fines and wood waste. These fabricated topsoils were used in the establishment of three treatment plots covering capped portions of the landfill and planted with fast-growing hybrid poplar trees (in 2007), coppicing willows (planted between 2008 and 2010) and forage grasses (seeded in 2010). The soil-plant treatment plots are irrigated with leachate which has undergone treatment in the aeration pond, providing additional leachate

treatment capacity, leachate quality improvement, and harvestable biomass. This system also satisfies the agricultural zoning requirement of the Site and provides Ecowaste with a biomass crop for harvest and use.

By the end of 2012, the soil plant system was irrigated with a total leachate volume of 4,225 mm (308,422 m3) in both woodlots combined and 10,359 mm (321,141 m3) in the grass lot. The poplars, willows and grasses are in their active phase of establishment, and should continue to increase in their capacity to assimilate leachate and leachate constituents over the near-term.

6.6 Reporting and Monitoring

The 1993 ALC Resolution #173/93 required that the ALR site be subject to ongoing and regular monitoring by the ALC and City of Richmond. Monitoring was to include preparation of semi-annual reports by a reclamation specialist to ensure compliance with the conditions of the Commission's approval.

Previous reporting and monitoring was completed by C & F.

7.0 CONCLUSION

The Site has undergone significant alteration to its soils resulting from peat extraction and subsequent filling with demolition waste, excavation waste and land-clearing debris under the Agricultural Land Commission's (ALC) 1993 approval. Currently 70% of the ALR land has been filled and approximately 25% has been rehabilitated under the existing permit. Upon completion of filling, the ALR Site will be covered with 2m of soils which will meet the BC Contaminated Sites Regulations Standards for Agricultural Land Use, as well as provide a Class 2A agricultural capability.

In addition to improving agricultural capability following peat extraction, Ecowaste has continued to meet the conditions of the 1993 ALC Resolution #173/93 as detailed in Section 6.0.

PGL's report established baseline conditions for the portion of the Site still undergoing filling activities as proposed in the non-farm use application. This area is proposed for four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The Site is primarily composed of three land uses: areas undergoing filling. rehabilitated areas and road access.

The ongoing filling and rehabilitation works will benefit agriculture through improvements to the agricultural capability and suitability of the ALR Site. Filling and subsequent rehabilitation will increase the agricultural capability from 100% 4W in the western portion of the property and 100% Ø5WP in the eastern portion of the property to and agricultural capability of 2A.

The requested non-farm use application wil also allow for the relocation of four related uses (Tervita, Qunatum Murray, Urban Wood Recyclers and Yardworks/Arrow) which are complimentary to the fill operation.

Respectfully submitted,

POTTINGER GAHERTY ENVIRONMENTAL CONSULTANTS LTD.
Per:

Stewart Brown, M.Sc., P.Ag., R.P.Bio.
Senior Environmental Scientist

E.L. (Ned) Pottinger, M.Sc., P.Geo., P.Ag.
Senior Consultant and Principal

CSB/ELP/slr
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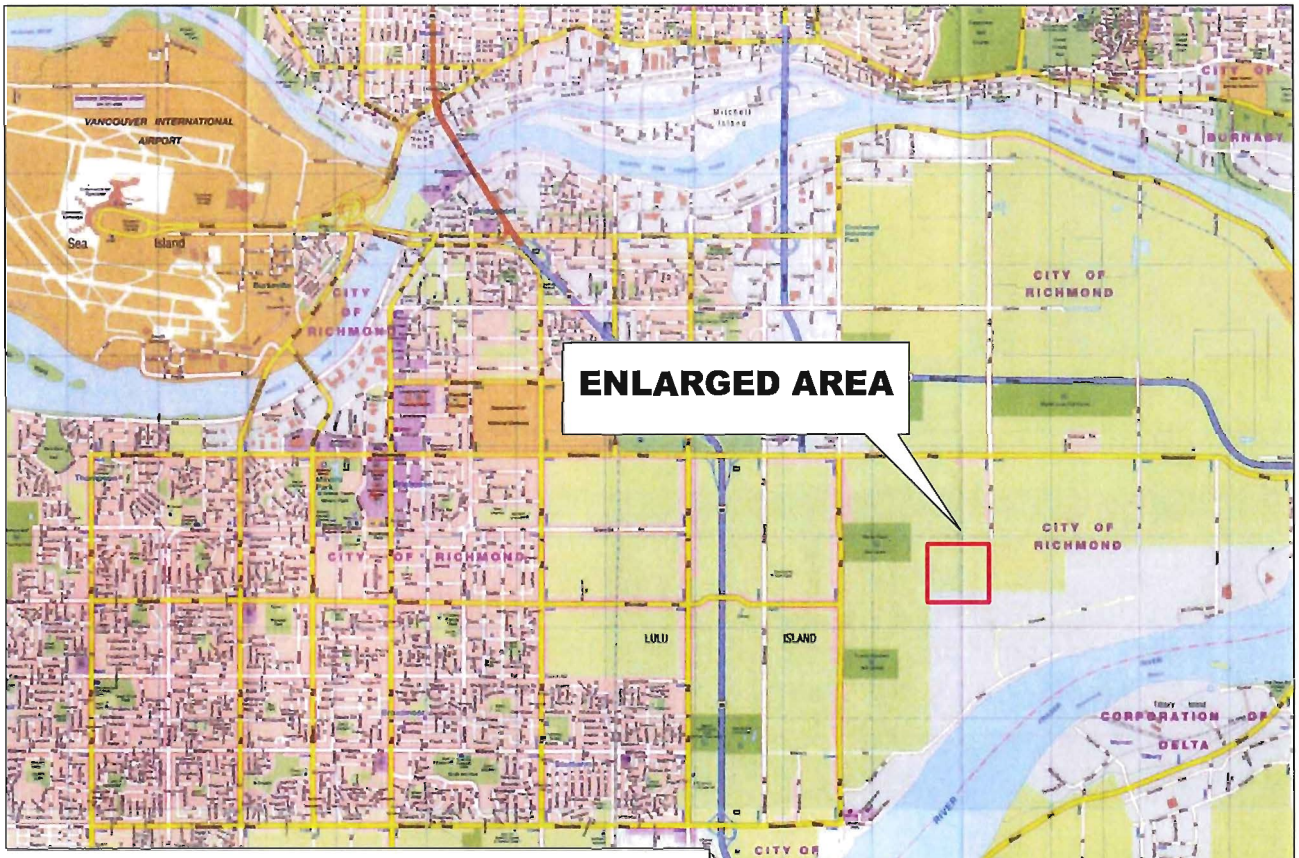
Figures



0 4000m

Scale 1:80,000

Greater Vancouver & Fraser Valley, MapArt Publishing, 2006.

0 1000m

Scale 1:20 000

2013 orthophoto supplied by GNH Engineering.

SITE LOCATION

7011 No. 7 Road, Richmond, BC

Ecowaste Industries Ltd.

N

File No.: 0079-04.01

Date: OCT 2013

Dwg No.: F1.2

Drawn by.: IRB

PGL | Pottinger Gaherty ENVIRONMENTAL CONSULTANTS

FIGURE **1**

ORIGINAL IN COLOUR

TEST PIT

TOPOGRAPHIC CONTOUR - MAJOR

TOPOGRAPHIC CONTOUR - MINOR

0 200m

Scale 1:4000

Ref.: 2013 orthophoto supplied by GVA Engineering.

SOIL INVESTIGATION	N
7011 No. 7 Road, Richmond, BC	File No.: 0279-04.01 Date: OCT 2013
Ecowaste Industries Ltd.	Dwg No.: F2.2 Drawn By: MB
PGL | Pottinger Gaherty	FIGURE 2

Appendix 1

Agricultural Capability Classes

Agriculture Capability Classes

Class 1 land is capable of producing the very widest range of crops. Soil and climate conditions are optimum, resulting in easy management.

Class 2 land is capable of producing a wide range of crops. Minor restrictions of soil or climate may reduce capability but pose no major difficulties in management.

Class 3 land is capable of producing a fairly wide range of crops under good management practices. Soil and/or climate limitations are somewhat restrictive.

Class 4 land is capable of a restricted range of crops. Soil and climate conditions require special management considerations.

Class 5 land is capable of production of cultivated perennial forage crops and specially adapted crops. Soil and/or climate conditions severely limit capability.

Class 6 land is important in its natural state as grazing land. These lands cannot be cultivated due to soil and/or climate limitations.

Class 7 land has no capability for soil bound agriculture.

Agriculture Capability Subclasses

A & M	Soil Moisture Deficiency	N	Salinity
C	Adverse climate (excluding precipitation)	P	Stoniness
D	Undesirable soil structure	R	Shallow soil over bedrock and/or bedrock outcropping
E	Erosion	S & X	Cumulative and minor characteristics
F	Low fertility	T	Topography
I	Inundation adverse (flooding by streams, etc.)	W	Excess water

Unimproved ratings describe the land in its native condition without any improvements to the soil.

Appendix 2

Site Photos

Photograph 1: Existing soil conditions in the proposed Tervita operations area

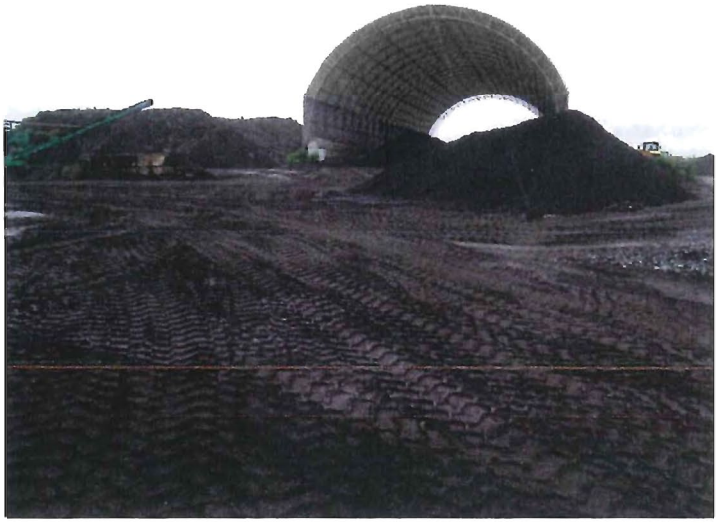
Photograph 2: Fill and final fill elevation in the background for the northern portion of the property proposed for Tervita's operations

Photograph 3: Eastern portion of the subject property following filling and reclamation

Photograph 4: Eastern portion of the subject property following filling and reclamation (looking west)

Photograph 5: Active filling on portion of subject property proposed for Quantum's operations

Photograph 6: Active filling on portion of subject property proposed for Urban Wood Waste's operations



Photograph 7: Arrow Transports existing facilities on the western portion of the subject property

Photograph 8: Filled and reclaimed portion of the southwestern portion of the subject property, including tree plantation

Photograph 9: Testpit 1 located west of proposed Tervita operations area

Photograph 10: Testpit 2 located in the proposed Tervita operations area

Photograph 11: Testpit 3 located in the proposed Tervita operations area

Photograph 12: Testpit 4 located in the northeast reclaimed grass lot

Photograph 13: Testpit 5 located on the eastern portion of the subject property. Area still to be reclaimed.

Photograph 14: Testpit 6 located on the eastern portion of the subject property. Area still to be reclaimed.

Photograph 15: Testpit 7 located in the proposed Quantum operations area

Photograph 16: Testpit 8 located in the proposed Quantum operations area

Photograph 17: Testpit 9 located in the Arrow Transport operations area

Photograph 18: Testpit 10 located in filled and reclaimed area west of Arrow Transport area

Photograph 19: Testpit 11 located in the proposed Ecowaste operations area

Photograph 20: Testpit 12 located in the proposed Ecowaste operations area

Agricultural Capability and Suitability on Completion of Project

Ecowaste Landfill
7011 No. 7 Road
Richmond, BC

Prepared for:
Ecowaste Industries Ltd.
200 – 10991 Shellbridge Way
Richmond, BC
V6X 3C6

Prepared by:
Pottinger Gaherty Environmental Consultants Ltd.
#1200 – 1185 West Georgia Street
Vancouver, BC
V6E 4E6

PGL File: 079-04.02

December 2014

PGL

Table of Contents

1.0 INTRODUCTION

Ecowaste Industries Ltd. (Ecowaste) asked Pottinger Gaherty Environmental Consultants Ltd. (PGL) to provide a short report discussing the agricultural capability and suitability of their landfill following completion of closure and reclamation.

Our report includes a description of the site, a description of the historical and current Site soils, and an assessment of the Site's future agricultural capability/suitability.

2.0 SITE DESCRIPTION

The Site is located in the City of Richmond (Figure 1) and is part of the Ecowaste landfill operated by Ecowaste at 15111 Williams Road in Richmond, BC. The Ecowaste Landfill is comprised of 118ha located between No. 6 and No. 7 Roads and between Granville Avenue and Williams Road. Of the 118ha, a 61ha parcel consisting of two lots are located within the Agricultural Land Reserve (ALR) (ALR site). The remainder is located on a 57ha non-ALR parcel (Industrial Site).

The Ecowaste landfill, including the non-ALR portion, accepts the disposal of inert waste primarily from construction and demolition activities. The landfill also accommodates several related industries as tenants, including yard waste composting facilities, wood processing facilities, and two soil remediation facilities all of which will operate on the ALR portion of the site for the next period of operation.

Following placement of the solid waste, the completed landfill will be improved by placement of a soil cover suitable for agriculture. Soils placed on the ALR-zoned portions of the property are required to meet the BC Contaminated Sites Regulation's Agricultural Land Use Standards and will be designed to enable a wide range of soil bound agricultural uses.

The surrounding area is characterized by:

- North: ALR Agricultural Land Use;
- West: ALR agricultural with a mix of non-farm uses including a golf course/driving range and as well as farm uses;
- South: Non-ALR Ecowaste land fill which will be developed as a logistics-based industrial park once filling is complete; and
- East: Non-ALR Industrial land use operated by Port Metro Vancouver and developed for port-related industrial purposes.

All of the surrounding uses would be compatible with future use of the Site for agriculture.

3.0 BACKGROUND

PGL conducted site investigations and reviewed existing historical reports, maps, and aerial photographs of the Site, pertinent documents at the Agricultural Land Commission (ALC), developing a detailed soil sampling plan, and conducting a Site visit to describe soils.

The entire property has been disturbed from original conditions due to peat extraction and subsequent waste filling activities. Soils vary across the site depending on the state of filling and typically fall into three categories: road network, areas undergoing filling and filled/rehabilitated areas.

This ALR portion of the site will have four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The operators include Tervita Corporation, Quantum Murray, Urban Wood Waste Recyclers and Yardworks/Arrow. Yardworks/Arrow is already located on the site while the remaining three operations are currently located on Ecowaste's industrial property.

4.0 1993 ALC APPROVAL CONDITIONS

The 1993 ALC Resolution #173/93 allowed peat extraction and the deposition of fill to be undertaken on the Ecowaste property subject to Rehabilitation of the Filled Area, and installation of irrigation and drainage. The plan was to reclaim the site to Class 2 agricultural capability with only minor limitations to soil bound agriculture.

4.1 Final Site Preparation and Filling Procedures

Once the final closure elevation has been achieved the Site will be covered with 2m of soils which meet the BC Contaminated Sites Regulations standards for Agricultural Land Use. The final 0.5m of the subgrade will consist of free draining, permeable soil, sand or gravel, while the overlying topsoil will be clean with a coarse fragment content less than 5% with no texture finer than silty clay loam and no coarser than sandy loam. The topsoil will also be placed evenly over the surface to the finish grade.

4.2 Rehabilitation of the Filled Area Procedures

The original approval for fill/rehabilitation as approved by the ALC by resolution #173/93 required that the final improved agricultural capability rating, with irrigation is to be Class 2A. To meet the improved classification, the resolution also required that rehabilitation of the filled area:

- Upon completion of filling , the fill is to be capped with a minimum of 1.0m of medium-textured glacial till material;
- Upon completion of spreading and compacting the capping, a minimum of 0.8m of medium-textured sands are to be placed over the capping;
- The final upper 0.3m is to be loamy sand;
- Encouraging backhauling of good quality agricultural soil for rehabilitation purposes;
- Application of suitable organic matter to the upper 0.3m of reclaimed soil; and
- Preparation of a seedbed if no immediate agricultural use is planned.

Following rehabilitation, the rehabilitated site will be maintained in a high state of agricultural management for a period of no less than five years following completion. Already rehabilitated areas have been either seeded with a forage crop or used for agro-forestry.

4.3 Drainage Control and Drainage System Installation

Drainage control and drainage system installation is detailed in Ecowaste's January 2013 Design, Operations and Closure Plan Submission which is included in Ecowaste's Application for Non-Farm Use and Soil Permit Renewal.

Stormwater and runoff from the site are managed through a storm water drainage and collection system. The leachate that percolates through the cap is managed in a separate leachate collection system. It then undergoes additional treatment via an aeration pond and passage through a constructed wetland before ultimately being discharged to the No. 7 Canal via the Granville Avenue ditch. If appropriate, this leachate could be used for irrigation post closure. If not, irrigation water will be sourced from the local agricultural drainage and irrigation ditches.

4.4 Irrigation Installation

In 2006, Ecowaste retained SYLVIS to design and construct a soil-plant system for use as an irrigation-based leachate treatment option. In 2007, SYLVIS began fabricating topsoil using combinations of sand, biosolids, recycled paper fines and wood waste. These fabricated topsoils were used in the establishment of three treatment plots covering capped portions of the landfill and planted with fast-growing hybrid poplar trees (in 2007), coppicing willows (planted between 2008 and 2010) and forage grasses (seeded in 2010). The soil-plant treatment plots are irrigated with leachate which has undergone treatment in the aeration pond, providing additional leachate treatment capacity, leachate quality improvement, and harvestable biomass. This system also satisfies the agricultural zoning requirement of the site and provides Ecowaste with a biomass crop for harvest and use.

By the end of 2012, the soil plant system was irrigated with a total leachate volume of 4,225mm (308,422m^3) in both woodlots combined and 10,359mm (321,141m^3) in the grass lot. The poplars, willows, and grasses are in their active phase of establishment, and should continue to increase in their capacity to assimilate leachate and leachate constituents over the near-term.

4.5 Reporting and Monitoring

Monitoring will include preparation of semi-annual reports by a reclamation specialist to ensure compliance with the conditions of the Commission's approval.

5.0 CONCLUSION

On completion of landfilling, the ALR portion of the site will be covered with 2m of soils which will meet the BC Contaminated Sites Regulations standards for Agricultural Land Use as well as provide a Class 2A agricultural capability.

In addition to improving agricultural capability following peat extraction, Ecowaste has continued to meet the conditions of the 1993 ALC Resolution #173/93.

PGL's report established baseline conditions for the portion of the site still undergoing filling activities as proposed in the non-farm use application. This area is proposed for four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The site is primarily composed of three land uses: areas undergoing filling, rehabilitated areas, and road access.

The ongoing filling and rehabilitation works will benefit agriculture through improvements to the agricultural capability and suitability of the ALR site. Filling and subsequent rehabilitation will increase the agricultural capability from 100% 4W in the western portion of the property and 100% Ø5WP in the eastern portion of the property to and agricultural capability of 2A.

On completion of reclamation and preparing the soils for agricultural, the site will be capable of growing a wide range of soil bound agricultural crops. The types of crops and the agricultural systems would be difficult, but the site will be in an area with compatible uses and enough separation from non-farm uses to allow for a wide range of choices.

Respectfully submitted,

POTTINGER GAHERTY ENVIRONMENTAL CONSULTANTS LTD.

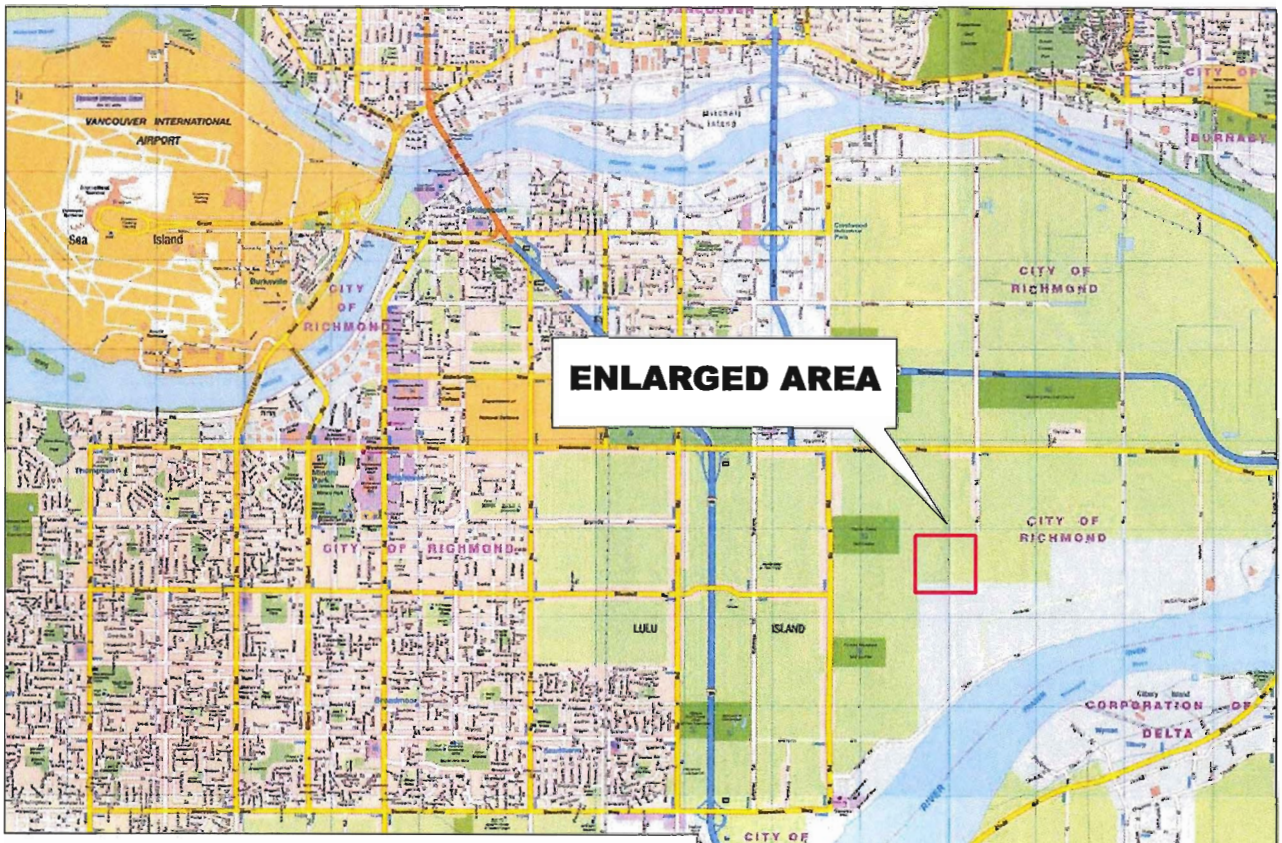
Per:

E.L. (Ned) Pottinger, M.Sc., P.Geo., P.Ag.
Senior Consultant and Principal

Stewart Brown, M.Sc., P.Ag., R.P.Bio.
Senior Environmental Scientist

ELP/CSB/slr
r-079-04-02-Dec14-Final.doc

Figure



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Scale 1:80,000

Greater Vancouver & Fraser Valley, MapArt Publishing, 2006.

0 1000m

Scale 1:20 000

SITE LOCATION

7011 No. 7 Road, Richmond, BC

Ecowaste Industries Ltd.

N

File No.: 0079-04.01

Date: JULY 2013

Dwg No.: F1.1

Drawn by.: IRB

PGL | Pottinger Gaherty ENVIRONMENTAL CONSULTANTS

FIGURE 1

ORIGINAL IN COLOUR

City of Richmond

Building Permit Considerations

Development Applications Division
6911 No. 3 Road, Richmond, BC V6Y 2C1

Location: Lands Bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances

File No.: AG 14-654361; NF 14-654364

Prior to Building Permit issuance, the applicant must complete the following in addition to complying with the standard requirements and regulations:

1. Registration of a legal agreement (to be registered on the title of all applicable lots) for all of the Ecowaste owned properties bounded by Williams Road to the south, Savage Road allowance to the west, Granville Road allowance to the north, No. 7 Road allowance to the east and the rail allowance running along the south east edge that identifies that all properties within this area cannot be transferred/sold independent of one another.